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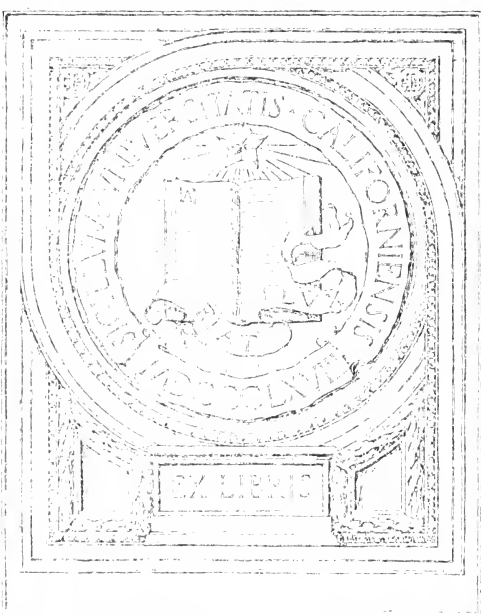
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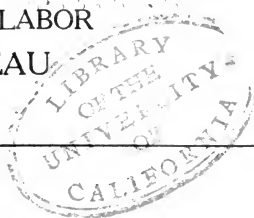
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U. S. DEPARTMENT OF LABOR  
CHILDREN'S BUREAU

GRACE ABBOTT, Chief



# CHILD CARE

THE PRESCHOOL AGE

BY

*Mary (Mills)*

" MRS. MAX WEST "



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1922

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## RECORD OF CHILD'S GROWTH.<sup>1</sup>

Name.....

Date of birth.....

| Period.                 | Weight. |         | Height. |         |
|-------------------------|---------|---------|---------|---------|
|                         | Pounds. | Ounces. | Feet.   | Inches. |
| At birth.....           |         |         |         |         |
| End of first year.....  |         |         |         |         |
| End of second year..... |         |         |         |         |
| End of third year.....  |         |         |         |         |
| End of fourth year..... |         |         |         |         |
| End of fifth year.....  |         |         |         |         |

<sup>1</sup> See table of heights and weights, p. 69.

*Handwritten signature*

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## LETTER OF TRANSMITTAL.

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UNITED STATES DEPARTMENT OF LABOR,  
CHILDREN'S BUREAU,  
*Washington, D. C., February 24, 1918.*

SIR: I transmit herewith the third bulletin in the Care of Children series.

This bulletin discusses the care of the child from 2 to 6 years of age, continuing through the important preschool period the directions for the care and hygiene of the child begun in the previous bulletins, Prenatal Care and Infant Care.

Like the preceding bulletins of this series, this number is addressed to the average American mother and particularly to those mothers who are so situated that they are obliged to forego many of the opportunities afforded to those who live within easy distance of libraries, infant and child welfare associations, physicians, visiting nurses, and other aids in the problems of child care. Also, like the other bulletins of the series, it attempts no more than to set forth the best accepted opinions upon the matters included in its scope. In the age period considered many forms of defect and disease have been found to make their appearance which might have been prevented by a better understanding of the simple laws of hygiene.

The bulletin is written by Mrs. Max West, who prepared the earlier bulletins in this series. Dr. Grace L. Meigs, in charge of the division of hygiene of the Children's Bureau, has supervised the discussion of subjects touching the medical field.

The bureau is again indebted to many physicians and other persons for critical reviews of the manuscript and for assistance in securing material.

Special mention must be made of the helpful cooperation of the Division of Home Economics of the States Relations Service, United States Department of Agriculture, as well as that of the Extension Service of the University of Wisconsin.

Respectfully submitted.

JULIA C. LATHROP, *Chief.*

HON. W. B. WILSON,  
*Secretary of Labor.*





## CHILD CARE.

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### GROWTH AND DEVELOPMENT.

#### LIVING CONDITIONS.

The growth impulse is inherent in the young of all animals, including the human being, and in obedience to this natural impulse children will grow even under hampering surroundings. But for perfect development of body and mind certain fundamental physical conditions are required. Among these are pure air, food, and water; warmth and protection; sleep and rest; freedom and exercise. It is plain wisdom, therefore, to surround children throughout the whole period of childhood as far as possible with those conditions which are most favorable to healthy growth. Whatever qualities the child may have inherited from his parents may be modified by his surroundings, either to his advantage or disadvantage. One of the common lessons of everyday experience is that a plant which grows strong and vigorous and produces a wealth of bloom and fruit when the soil, water, and sunshine are adapted to the requirements of this particular plant will grow spindling and weak and produce few or stunted blossoms and fruit when the conditions are unfavorable. Sunshine, fresh air, and proper food are equally essential to the human plant.

Studies made by the Children's Bureau show that in rear and alley houses with bad sanitary conditions, dark, overcrowded, and badly ventilated rooms many more babies die in the first year of life than in houses on the better streets, and it is fair to assume that such conditions would not favor healthy growth at any age.<sup>1</sup>

#### THE CHOICE OF A HOME.

A baby may thrive very well for the first year or two of life in a flat or apartment, but a child old enough to run about should have much more freedom than such quarters afford and should be able to spend a great part of his life out of doors. It is so difficult to provide these conditions in any adequate degree in an apartment that a separate house *with a yard* is greatly to be preferred as a home for a

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<sup>1</sup> See reports on infant mortality, eight in number, published by the U. S. Children's Bureau, Washington, D. C.

child. Even though the house itself may be small and lacking in some of the comforts and conveniences, that does not matter much as far as the child is concerned if he can spend most of his life out of doors. The difference which even two weeks in the country in the summer makes in the appearance of pale and listless city children shows how important sunshine, fresh air, and free exercise are to the health of the growing child.

When it is absolutely necessary to make a home in the more crowded part of a city an effort should be made to locate near a park or other open space to which children may frequently be taken. Every bit of yard should be utilized, and in some cases the roofs may be used for playgrounds and out-of-door sleeping. By the exercise of great ingenuity even the most unfavorable place may often be rendered somewhat more suitable for child life. Fortunately the tendency of the present day is to improve the suburbs of most American cities, the extension of the trolley lines in every direction, and the decreasing cost of motor cars bring the advantages of outside homes within the reach of a constantly growing number of people. Children are also reaping great benefit from the growing taste for out-of-door life which the present generation has developed and which has led many families to seek suburban or country homes.

#### FRESH AIR.

Air is the first condition of life and growth. It is possible to live without food for days and without water for hours, but if a person is deprived of air for a few moments life ceases, because the bodily processes can not go on without oxygen. Children who spend a large part of their time indoors, and especially those who must live or work in close, hot, overcrowded rooms or houses, are apt to be dull, listless, pale, and underdeveloped. The growing use of flats and apartments with tight doors and windows and modern heating systems is partly responsible for the alarming spread of diseases of the throat and lungs not only among children but among adults as well. The system becomes weakened and less resistant to disease by too high temperatures and by lack of constant and sufficient fresh air. A child should not be allowed needlessly to suffer this handicap to his development. Many parents do not realize that to deprive a child of sufficient fresh air is quite as serious as to deprive him of sufficient food.

#### VENTILATION.

Indoor air is vitiated by the occupants of the rooms, by fires, by illuminants other than electricity, by dust, gases, and smoke, particularly tobacco smoke. To sweep out the used air and admit a fresh supply of pure air is the business of ventilation. Good ventila-

tion requires that the air in the house shall be kept in gentle, if imperceptible, motion; that it shall be warmed or cooled to the right temperature and shall have the proper degree of humidity and freshness.

Windows and outside doors are the chief means of ventilating the ordinary home and should be kept open most of the time in summer and be opened at frequent intervals in winter. The best way to ventilate a room is to open the windows or doors on opposite sides in order to secure a cross current. If the wind happens to be blowing strongly, it will speedily fill every part of the house with clean, fresh air, but on a still day the process will take longer. Every occupied room in the house, including dining and sitting rooms, should be completely flushed with pure out-of-door air at least once in 24 hours.

To prevent the cold air from chilling the floor a window board may be inserted in the opening made when the lower sash is raised a few inches, which permits the cold air to enter the room between the two sashes, while the heated air passes out through a slight opening at the top of the window. This method of ventilation is particularly well adapted to rooms which are in constant use. In severe northern winters it is a very difficult matter to keep the house comfortably warm and at the same time to keep the air fresh. In the daytime the rooms may be aired when they are not in use. Rooms which have been chilled must be warmed again before children come into them. The play room or sitting room may be aired after the children have gone out or while they are asleep, and the bedrooms may be flushed thoroughly at least once during the day even in the coldest weather. At night at least one window in the bedroom should be constantly open, even if only a crack. The children can be put into sleeping bags,<sup>1</sup> using two or three if necessary. The beds can be screened to protect the children from drafts or the heat can be kept on all night; but if they are warmly covered, children will be benefited in every way by the fresh air. One method of ventilating bedrooms in cold weather is to cover an ordinary window screen with a thickness or two of cheesecloth and insert it in the widely opened window. A screen of this kind will afford a surprising amount of protection against a too sudden inrush of icy air.

Sleeping porches have largely solved the question of ventilation for bedrooms, and whenever such a porch is available the children may safely use it after they are past infancy, except in extremely cold or stormy weather and when a high wind is blowing.

There is a popular prejudice against drafts, but after a person has become accustomed to air in motion he will find that he does not

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<sup>1</sup> See p. 38.

suffer from it. Children who are used to rooms through which a gentle current of air is constantly passing are far less likely to suffer from diseases of the nose and throat than are those who are kept in tight rooms where the air is still and tends to become overheated. An open fireplace or grate is one of the best means of securing good ventilation. No system of ventilation, however faithfully carried out, keeps the indoor air suitable for children to live in continuously. As one writer has said, it is necessary also to "ventilate the children." Even in winter and in stormy weather, when many forms of outdoor life are necessarily curtailed, a sheltered porch, preferably on the sunny side of the house, will make it possible for the children to have many happy and beneficial hours out of doors, while in the milder months they should live out of doors as large a part of the day as possible.

#### HEATING.

A heating system is successful when it warms the house so well that windows may be kept slightly open much of the time, even in cold weather. A system that requires the rooms to be sealed in order to be kept comfortably warm is bad. The real and practical problem of heating is the cost of fuel, but "coal is cheaper than colds."

Houses in the United States are usually heated by indirect radiation—that is, by steam, hot water, or hot air—or by direct radiation produced by stoves of various kinds or by open fires. Hot water and steam are cleanly and easily controlled and give an even heat throughout the house, but houses and apartments thus warmed are apt to be overheated much of the time because of the ease with which the heat is distributed. Neither system brings fresh air into the rooms. A hot-air furnace is troublesome and dusty, but has the advantage of combining ventilation with heating. All indirect systems make the inside air too dry, but various methods of adding moisture are in use. It is said that in very cold dry weather the ordinary medium-sized house requires the addition to the air of 10 gallons or more of moisture every 24 hours. Shallow pans of water on the registers, radiators, or stoves will keep the air in the rooms somewhat moist.

Stoves help to keep the air in the room in circulation, but distribute the heat unevenly. A fireplace or an open stove is an excellent ventilator and is useful as an accessory to a general heating system. Every open fire should be covered with a strong wire screen to protect children against accident.

An oil or gas heater has the disadvantages of other stoves and consumes much larger quantities of oxygen. Such a heater may be used in a small room if no other means of heating can be had or

when quick heat is needed, but is suitable only for temporary use. Every precaution must be taken to guard children against accident if these stoves are used.

#### FOOD.

From the very beginning of life the child who is to develop normally must have sufficient and suitable food. Many thousands of babies die before birth, or soon after, because of the illness, overwork, or underfeeding of their mothers during the nine months of prenatal life.<sup>1</sup> Some who are fortunate in being a little stronger at birth may survive but require special care to make up for their poor start. Many babies, puny at birth, may be built up by judicious feeding into strong children.

A study of the directions for feeding the baby<sup>2</sup> will show that his dietary is slowly and cautiously enlarged as he grows older by adding to the exclusive milk diet of infancy cereals, fruits, a few vegetables, soups, and a little meat, and by giving somewhat greater quantities at each feeding. The same plan is followed throughout childhood, but for the first five years the diet should still be restricted to those foods which best supply the requirements of healthy growth and are at the same time adapted to the child's digestive powers. One of the most serious conditions which affect children is malnutrition. This means that the child can not draw enough suitable nutriment from the food he eats to supply all his bodily needs. This condition may be due to actual lack of food. Here the remedy is plain. But the children of well-to-do families often suffer from serious malnutrition. This is due in some cases to badly selected and badly prepared foods; in others to overeating or irregularity in eating, or to illness, congenital defects in the digestive organs, lost or decayed teeth, and to more obscure causes. Undoubtedly one important cause of malnutrition is a lack of knowledge of the fundamental principles underlying the proper selection of foods and the best way to prepare them for the table.

Mothers who boast smilingly that the baby "eats everything" forget that the child's digestive organs are no more capable of dealing with all foods that grown people eat than are the bones, muscles, and brain capable of doing the work of grown people. The stomach and intestines, like other organs of the body, must be gradually trained to harder work until by slow degrees they become accustomed to dealing with foods eaten by adults. An important part of the feeding of children lies in the selection of certain foods for this

<sup>1</sup> Prenatal Care, the first bulletin of this series, gives directions for the diet and care of the mother during the period of pregnancy. The second bulletin, Infant Care, shows how to care for the baby during the first two years of life. These bulletins may be secured free from the Children's Bureau, U. S. Department of Labor, Washington, D. C.

<sup>2</sup> See Infant Care (revised), pp. 67-78.

training. It is a serious error to assume that a child's special dietary needs can always be adequately supplied by the foods appearing on the family table and that the methods of preparing and cooking them are always suitable for children, for many articles which may be digested by adults, such as baked beans, boiled cabbage, pastry, fritters, and fried food, and certain methods of cooking for grown persons are distinctly bad for children.

#### A WELL-CHOSEN DIET.

Experience has demonstrated that human beings thrive best on a mixed diet of animal and vegetable foods, because from such a diet the body can most readily obtain the materials it needs for growth, repair, and operation.

A well-chosen diet is one which supplies all these materials in suitable proportion; a "deficiency" diet is one in which one or more of the essential food substances is wholly or partially lacking.

On pages 15 to 30 simple directions are given for the judicious selection and preparation of ordinary foods with reference to the special dietary needs of children.<sup>1</sup>

The day's meals for the family should furnish the following elements:<sup>2</sup>

*Mineral substances* of great variety (lime salts, compounds of phosphorus, iron, and others.)—These are used by the body for building material and are found in all parts of it. They also produce substances within the body tissues which tend to offset acid substances produced in the tissues in the course of digestion of meats and cereals and serve many other important uses. Without fruits and vegetables the meals would be likely to lack certain mineral substances. Without milk they would be lacking in a mineral substance specially needed by children; that is, lime.

*Protein*.—Protein serves as fuel for the body and also provides a certain important element, nitrogen, which is needed in the case of children for growth and in the case of both children and grown people to keep the body in repair. Without the meat or meat substitutes (including milk) the meals would be lacking in this body-building material.

*Starch*.—This is one of the chief fuels of the body and is supplied mainly by the cereal foods.

*Sugar*.—This serves as fuel for the body and to flavor the food. It is found in milk, fresh fruits, and many other materials, but unless small amounts of very sweet materials—sugar itself, sirup, or honey—are used, the diet is likely to be lacking in it.

*Fat*.—This serves as body fuel and also improves the flavor and texture of the food. It is present in meats, nuts, and many other foods, but unless small amounts of specially fat materials, like butter, oil, or cream, are used, the meals are likely to be lacking in it. Moreover, dishes cooked without a certain

<sup>1</sup> The material which follows is taken substantially from Farmers' Bulletins 717 and 808, Pt. I. U. S. Department of Agriculture. Bulletin 808 was written by Caroline L. Hunt and Helen W. Atwater. Bulletin 717 was written by Miss Hunt at the suggestion of and in cooperation with the Children's Bureau.

<sup>2</sup> How to Select Foods, Part I. "What the Body Needs," Farmers' Bulletin No. 808.

amount of fat and meals served without butter or some substitute seem, to most persons, dry and unpalatable.

*Cellulose.*—This is the material which makes up the framework of plants. It gives bulk to the diet and may tend to prevent constipation. Without the fruits and vegetables the meals would be lacking in this important element.

*Certain newly discovered substances in very small amounts*, which are believed to play an important part in keeping people well and in promoting the growth of children. Without milk in the diet, some of these substances, particularly those necessary for children, would be lacking; and without meat, milk, eggs, fruits, and vegetables others needed by persons of all ages might not be present in sufficient amounts.

*Flavorings and condiments.*—In most families some materials are used in preparing or serving food which add to the attractiveness of the meals without furnishing the body any nourishment. Among these are salt, pepper, vinegar, lemon juice, spices, seasoning herbs, horse-radish, flavoring extracts, and many other materials often spoken of as "condiments."

The common foods which supply the necessary food elements are as follows:<sup>1</sup>

Fruits and vegetables, such as apples, bananas, berries, citrus fruits, spinach and other greens, turnips, tomatoes, melons, cabbage, green beans, green peas, green corn, and many other vegetables and fruits. Without these the food would be lacking in mineral substances needed for building the body and keeping it in good working condition; in acids which give flavor, prevent constipation, and serve other useful purposes; and in minute quantities of other substances needed for health. By giving bulk to the diet they make it more satisfying to the appetite.

Meat and meat substitutes, or protein-rich foods: Moderately fat meats, milk, poultry, fish, cheese, eggs, dried legumes (beans, peas, lentils, cowpeas, peanuts), and some of the nuts. These are sources of an important body-building material, protein. In the case of children, part of the protein food should always be whole milk.

Foods rich in starch: Cereals (wheat, rice, rye, barley, oats, and corn) and potatoes (white and sweet). Cereals come near to being complete foods, and in most diets they supply more of the nourishment than any other kind of food. It is not safe, however, to live only on cereals. The grains may be simply cleaned and partially husked before cooking, as in cracked wheat and Scotch oatmeal; they may be ground into flour and used as the basis of breads, cakes, pastry, etc.; or they may be partially cooked at the factory, as in many breakfast preparations; or they may be prepared in the form of such pastes as macaroni, noodles, etc. In all these forms they furnish the body with the same general materials, though in different proportions.

Sugar (granulated, pulverized, brown, and maple), honey, molasses, sirup, and other sweets. Unless some of the fuel is in this form the diet is likely to be lacking in flavor.

Foods very rich in fat: Bacon, salt pork, butter, oil, suet, lard, cream, etc. These are important sources of body fuel. Without a little of them the food would not be rich enough to taste good.

Some food materials really belong in more than one group. Cereals, for example, supply protein as well as starch; potatoes supply starch as well as

<sup>1</sup> How to Select Foods, Part I, "What the Body Needs," Farmers' Bulletin No. 808.

mineral matters, acids, cellulose, and body-regulating substances, for which they are especially valuable; and most meat supplies fat as well as protein. For the sake of simplicity, however, each material is here grouped according to the nutrient for which it is usually considered most valuable. These points are all brought out in more detail in other bulletins which discuss the special groups.

The lists given below show some of the common food materials arranged in these five groups. If the housekeeper will consult them in planning meals until she has learned where each kind of food belongs, she will have taken the first step toward providing a diet which will supply all the food needs of her family. It will be only one step, to be sure, but it should prevent two mistakes—that of serving meals that have not sufficient variety, and that of cutting down in the wrong places when economy, either of time or money, is needed:

#### FOODS DEPENDED ON FOR MINERAL MATTERS, VEGETABLE ACIDS, AND BODY-REGULATING SUBSTANCES.<sup>1</sup>

##### Fruits:

Apples, pears, etc.  
Bananas.  
Berries.  
Melons.  
Oranges, lemons, etc.  
Etc.

##### Vegetables:

Salads—lettuce, celery, etc.  
Potherbs or “greens.”<sup>2</sup>  
Potatoes and root vegetables.  
Green peas, beans, etc.  
Tomatoes, squash, etc.  
Etc.

#### FOODS DEPENDED ON FOR PROTEIN.

Milk, skim milk,, cheese, etc.  
Eggs.  
Meat.  
Poultry.

Fish.  
Dried peas, beans, cowpeas, etc.  
Nuts.

#### FOODS DEPENDED ON FOR STARCH.

Cereal grains, meals, flours, etc.  
Cereal breakfast foods.  
Bread.  
Crackers.

Macaroni and other pastes.  
Cakes, cookies, starchy puddings, etc.  
Potatoes and other starchy vegetables.

#### FOODS DEPENDED ON FOR SUGAR.

Sugar.  
Molasses.  
Sirups.  
Honey.

Candies.  
Fruits preserved in sugar, jellies, and dried fruits.  
Sweet cakes and desserts.

#### FOODS DEPENDED ON FOR FAT.

Butter and cream.  
Lard, suet, and other cooking fats.

Salt pork and bacon.  
Table and salad oils.

<sup>1</sup> How to Select Foods, Part I, “What the Body Needs,” Farmers’ Bulletin No. 808.

<sup>2</sup> Particularly spinach.



THE CHILD'S FOOD.<sup>1</sup>

A little child who is carefully fed in accordance with his bodily needs (as these are now understood) receive every day at least one food from each of the following groups:

1. Milk and dishes made chiefly of milk (most important of the group as regards children's diet); meat, fish, poultry, eggs, and meat substitutes.
2. Bread and other cereal foods.
3. Butter and other wholesome fats.
4. Vegetables and fruits.
5. Simple sweets.

The following bills of fare are simple, easy to prepare, sufficiently varied, and, if well prepared, should taste good. They are so planned that milk and another food from group 1 and a food from each of the other groups will be served at least once a day.

BREAKFAST.<sup>2</sup>

|  |  |
|--|--|
| Orange (juice only for the youngest children).     | Stewed prunes (pulp only for the youngest children). |
| Farina with milk.                                  | Corn-meal mush and milk.                             |
| Bread and butter.                                  | Toast and butter.                                    |
| _____  | _____  |
| Apple sauce.                                       | Grapefruit (juice only for the youngest children).   |
| Oatmeal with milk.                                 | Milk toast with grated yolk of hard-boiled egg.      |
| Toast and butter.                                  | _____  |
| _____  | _____  |
| Baked pears (pulp only for the youngest children). | Apple (scraped for very little children).            |
| Milk toast.  | Toast.   |
| Cocoa.   | Hot milk.  |

In each case enough milk should be given to make up the required daily amount, which is about a quart.

## DINNER.

|                                      |   |
|--------------------------------------|---|
| Meat soup.                           | Creamed potatoes.                           |
| Eggs on toast.                       | Green peas.                                 |
| String beans.                        | Stewed plums with thin cereal-milk pudding. |
| Rice pudding.                        | _____                                       |
| _____                                | _____                                       |
| Roast beef.                          | Baked halibut.                              |
| Baked potatoes.                      | Boiled potatoes.                            |
| Asparagus.                           | Stewed celery.                              |
| Bread and jelly.                     | Boiled rice with honey or sirup.            |
| _____                                | _____                                       |
| _____                                | _____                                       |
| Lamb stew with carrots and potatoes. | Broiled meat cakes.                         |
| Twice-baked bread.                   | Grits.                                      |
| Tapioca custard.                     | Creamed carrots.                            |
|                                      | Bread, butter, and sugar sandwiches.        |

In each case enough milk should be given to make up the required daily amount, which is about a quart.

<sup>1</sup> Food for Young Children, Farmers' Bulletin 717. In this discussion the author has arranged the food groups in accordance with their importance in the diet of a child. For this reason the order of the groups will differ from that given in the preceding pages.

<sup>2</sup> These breakfasts might well be enlarged by the addition of soft-boiled or coddled eggs.

## SUPPER.

|  |                           |
|--|---------------------------|
| Baked potatoes, served with cream<br>and salt, or with milk gravy. | Graham crackers and milk. |
| Cookies.   | Baked custard.            |
| _____  | _____                     |
| Bread and milk.  | Milk toast.               |
| Apple sauce.   | Stewed peaches.           |
| Sponge cake.   | Cup cake.                 |
| _____  | _____                     |
| Potato-milk soup.  | Celery-milk soup.         |
| Twice-baked bread.   | Toast.                    |
| Marmalade sandwiches.  | Floating island.          |

In each case enough milk should be given to make up the required daily amount, which is about a quart.

Though all the foods mentioned in the bills of fare may be included under five heads, the diet need not be monotonous, for many foods come under each class. The different groups are described in the pages that follow.

**FOOD GROUP NO. 1. MILK AND DISHES MADE CHIEFLY FROM IT; FISH, POULTRY, EGGS, AND MEAT SUBSTITUTES.**

The different foods mentioned in the heading of this group have enough in common to warrant bringing them together. However, milk is such an important food for children that it is desirable to speak of it by itself.

**MILK SERVED IN VARIOUS WAYS.**

Milk is the natural food of babies and the most important food for young children. A quart of milk a day is a good allowance for a child. The greater part of this is usually given as a drink or served on cereals or in the form of bread and milk. Milk may also be served on fruits that are not very acid (baked apples or pears, berries, and others), in soups, gravies, custard, junket, and other puddings, and may be used in place of water in cooking cereals.

Milk, being a liquid, is sometimes classed with water, tea, and coffee, simply as a beverage, by those who do not understand its value as food. This is a great mistake. If all the water were to be driven off from a quart of tea or coffee, almost nothing would be left, and the little that remained would have little or no value as food. If, on the other hand, the water were driven off from a quart of whole milk, there would be left about half a cupful of the very best food substances, including butter fat, a kind of sugar not so sweet as granulated sugar and known as "milk sugar," and also materials which are needed to make muscles, bones, teeth, and other parts of the body. All these valuable food substances are ordinarily either dissolved or floating in the water of milk.

Besides all this nourishment, milk contains a very small amount of a substance or substances now thought to help the body of the child to make good use of other foods. For this reason milk is often called "growth promoting." Apparently nothing can serve so well as the basis for the diet of the healthy child.<sup>1</sup>

Good whole milk is desirable, but if a mother is obliged to choose between clean milk and rich milk, she had better take the clean milk. Best of all, of

<sup>1</sup> See also "Milk, the Indispensable Food for Children," by Dorothy Reed Mendenhall, M. D. U. S. Children's Bureau Publication No. 35.

course, is clean whole milk, but if that can not be obtained it is better to use clean fresh skim milk than dirty or questionable whole milk. A quart of skim milk, even separator skim milk, contains about a third of a cupful of solid food, which is nearly all there was in the whole milk, except the butter fat.

When it is absolutely impossible to get fresh milk, condensed, powdered, or evaporated milk may be used, but before doing this parents should try in every way to get fresh milk for their children.

Compared with most other foods milk contains much lime but very little iron. Spinach and other green vegetables and egg yolks are, on the other hand, very rich in iron. This is one reason why combination of egg yolks and milk and of vegetables and milk are mentioned so often in this bulletin.

When milk is given to babies the chill is usually taken from it. It is safe to do this for all young children. When milk is used as a drink it should be sipped, not gulped down.

Besides being served as a beverage, milk is often combined with many other foods, as follows:

#### *Bread and milk.*

This may well be the chief, if not the only dish in the supper of little children. If the milk is not very rich, the bread should be spread with butter. Use well-baked bread, at least a day old, or toast, or occasionally crackers.

#### *Cereals and milk.*

Thoroughly cooked cereals served once a day for the first course and once a day for dessert encourage the use of milk. Directions for preparing them will be found on pages 19 and 23. Any cereal may be cooked in milk besides being served with it. Skim milk which might otherwise be thrown away may be used for the purpose. Rice, cooked in an uncovered double boiler, or in a pan in a very "slow" oven, can be made to absorb about six times its volume of skim milk. To cook a cupful of rice in this way instead of in water may be considered equivalent, so far as tissue-forming materials are concerned, to serving it with half a pound of lean beef.

#### *Milk toast.*

The following is a good method for making milk toast: Put on the table hot crisp toast or twice-baked bread (see p. 24) and a pitcher of hot milk, slightly salted. One-fourth teaspoonful of salt to a cupful of milk is sufficient. Pour the milk over the toast as needed, using hot bowls or deep saucers for serving. This is the easiest way of serving milk toast, and, if care is taken to have all the dishes hot and to salt the milk, it is usually acceptable. A supply of twice-baked bread can be kept on hand and heated as needed to crisp it.

Another way to make milk toast is to thicken milk and pour it over toast. For 1 cup of milk allow  $1\frac{1}{2}$  level teaspoons of flour and  $\frac{1}{4}$  teaspoon of salt. Make a smooth paste out of the flour, salt, and a little of the milk. Heat the rest of the milk; add the flour and milk mixture and boil for about 5 minutes, stirring constantly, or cook 20 minutes in a double boiler, stirring constantly at first and frequently later on. If skim milk is used, a level teaspoonful of butter or bacon fat should be added after the gravy is prepared.

An easier and quicker method of making the sauce or "milk gravy" is to cook the flour thoroughly in a tablespoonful of fat before adding the milk.

This, however, is not thought to be so wholesome as the kind of gravy in which the flour is cooked in the milk.

Milk gravy may be combined with dried beef or salt codfish which has been cut into small pieces and soaked in warm water, or with small pieces of tender meat, chicken, fish, or vegetables. Such gravy may be served with toast, with baked or boiled potatoes, or with boiled rice or other cereals. Dishes of this kind are more suitable for dinner than for supper.

Milk toast with the yoke of a hard-boiled egg grated over it makes an attractive dish. The whites of the hard-cooked eggs are not suitable for a young child nor for any child unless they are finely chopped or unless the child can be made to chew them well.

#### *Cocoa.*

For variety, milk flavored with cocoa may be served. Prepared cocoa is the most convenient, but cracked cocoa shells or nibs, which require long boiling, may be used. A warm drink, made chiefly out of cocoa and water, is not to be confused with the more nourishing drink made by flavoring milk with cocoa, but it has its uses. Like clear soups, which contain little food in themselves, it may lead the child to eat freely of bread and other needed foods.

#### *Milk soups.*

Another good way to serve milk to children is in soups. Milk-vegetable soups are made from cooked vegetables, chopped or strained, which in this form may be given to even the youngest children, and milk (whole or skim) slightly thickened. The vegetable may be asparagus, peas, beans of various kinds, celery, potatoes, turnips, carrots, spinach, kale, chard, beet roots or greens, parsnips, lettuce, cress, cauliflower or almost any other.

#### *General recipe for milk-vegetable soups.*

|                            |  |   |
|----------------------------|--|---|
| 2 cupfuls of milk.         |  | $\frac{3}{4}$ of a cupful of a thoroughly cooked vegetable, finely chopped, mashed, or put through a sieve. |
| 1 tablespoonful of flour.  |  |   |
| 1 tablespoonful of butter. |  |   |
| Salt.                      |  |   |

Thicken the milk with the flour as for milk gravy; add the other ingredients. If the soup is too thick, as it may be if the vegetable is starchy, thin it with milk or water. Milk-tomato soup is not recommended for the youngest children. When it is served a little soda should be added to prevent the milk from curdling.

#### *Milk stew.*

|  |  |  |
|--|--|--|
| 1 quart of milk.                             |  | 2 tablespoonfuls of butter or bacon fat.                                     |
| 1 cupful raw potatoes cut into small pieces. |  | 1 cupful of codfish cut into small pieces or just enough to flavor the stew. |

Soak the fish in lukewarm water until it is soft and the salt removed. Cook the potatoes in water until tender, drain them, add the milk and codfish, and bring to the boiling point; add the butter, and salt to taste.

In place of the codfish any other salt or fresh fish, oysters, or a little chipped beef may be used. Or the fish may be omitted and the soup made savory and palatable by adding a few drops of onion juice, or a vegetable cut into small pieces and cooked thoroughly.

*Cereal-milk puddings.*

Puddings made with milk and bread, rice, or some other cereal food, have long been recognized as desirable in the child's diet.

Such milk puddings as old-fashioned rice or Indian pudding may be the means of serving much milk in a wholesome way. From the following recipe for rice pudding other recipes can be easily made, the proportions in all cases being about the same:

*Rice pudding.*

|                                    |  |  |
|------------------------------------|--|--|
| 1 quart of milk.                   |  | $\frac{1}{2}$ teaspoonful of ground nutmeg, or   |
| $\frac{1}{2}$ cupful of rice.      |  | cinnamon, or the grated rind of $\frac{1}{4}$ of |
| $\frac{1}{2}$ cupful of sugar.     |  | a lemon.   |
| $\frac{1}{2}$ teaspoonful of salt. |  |  |

Wash the rice thoroughly, mix the ingredients, and bake three hours or more in a very slow oven, stirring occasionally at first.

*General recipe for cereal-milk puddings*

For a quart of milk allow one-third of a cupful of any coarse cereal (rice, corn meal, cracked wheat, oatmeal, or barley) and one-third of a cupful of brown, white, or maple sugar, sirup, honey, or molasses; one-half teaspoonful of salt; one-eighth teaspoonful of spice. The flavoring may be omitted when honey or molasses is used.

The above recipe makes quite a large pudding. It is often convenient to make a smaller one, and enough for a child's dinner can be made in the double boiler, allowing 2 level or 1 rounding tablespoonful each of cereal and of sugar (or other sweet) to a cupful of salted and flavored milk. Cook an hour or more without covering.

These puddings, if made thin, may be poured over stewed prunes or other cooked fruits, and are a good and economical substitute for the cream or soft custard usually used for that purpose.

*Custard and other milk puddings.*

There are many other milk dishes which are used in the same way as this milk and cereal pudding. Recipes for some of them follow:

Junket, or "rennet custard," is milk that has been coagulated or curdled, a process not unlike one of the first steps in digestion. The curdling is brought about by the addition of "junket tablets" to the milk. Milk containing rennet will, if not disturbed, "set" in one piece resembling a custard. Junket differs little from milk in food value except for the presence of the sugar used for flavoring, but it gives variety to the diet. If served very cold it is refreshing in warm weather.

*Junket.*

|   |  |                                     |
|---|--|-------------------------------------|
| 2 cupfuls of milk.                              |  | $\frac{1}{2}$ teaspoonful of salt.  |
| $\frac{1}{2}$ cupful of sugar, honey, or sirup. |  | A few grains of nutmeg or cinnamon. |
| 1 junket tablet.                                |  |                                     |

Warm the milk to about the temperature of the body, crush the tablet, and add it with the other ingredients to the milk. Pour into one large or several small dishes and place in a warm (not hot) place to harden. Cool before serving.

*Boiled custard.*

3 egg yolks.  
2 cupfuls of milk.  
 $\frac{1}{4}$  cupful of sugar, honey, or sirup.

$\frac{1}{8}$  teaspoonful of salt.  
Flavoring.

Heat the milk in a double boiler. Thoroughly mix the eggs and sugar and pour the milk over them. Return the mixture to the double boiler and heat it until it thickens, stirring constantly. Cool and flavor. If the custard curdles, remove it from the fire and beat with an egg beater. This custard may be served in place of cream on many kinds of dessert.

*Floating island.*

In this dish the whites of eggs left over from boiled custard can be used to serve with it. Beat the whites until stiff; sweeten them a little; and cook them in a covered dish over water which is hot but not boiling; or cook them on top of the hot milk which is to be used in making custard. Lift them out with a wire egg beater or split spoon, and place on top of the custard. Decorate with small bits of jelly.

*Tapioca custard.*

Tapioca custards may be made as follows: Add to the list of ingredients for boiled custard one-fourth cupful of pearl tapioca. Soak the tapioca in water for an hour or two, drain it, and cook in the milk until it is transparent. Proceed as for boiled custard.

*Baked custard.*

In making allow 1 egg and 2 level teaspoonfuls of sugar and a few grains of salt and nutmeg for each cupful of milk. Beat the eggs slightly and add the other ingredients. Bake in cups set in a pan of water in a moderate oven.

*Simple ice creams.*

In the way they are used, ice cream and frozen custard may be grouped with the puddings. Plain ice cream made out of thin cream, sweetened and flavored, or out of cream and custard mixed, may be given to children occasionally.

A good ice cream may be made as follows: Allow one-fourth cupful of sugar to each cupful of thin cream (half milk and half cream); flavor and freeze.

A frozen custard, commonly called by housekeepers "ice cream" or "French ice cream," which contains eggs as well as milk and cream, may be made as follows: For each half cupful of milk allow one-fourth cupful of sugar, one or two egg yolks or one whole egg, and a half cupful of cream. Make a custard out of all the ingredients but the cream. When it is cool, flavor it, add the cream, and freeze.

*Caramel flavoring for use in custards, ice creams, and other desserts.*

An economical flavoring for any of the above desserts may be made by browning or caramelizing ordinary sugar. To each cupful of sugar add one-fourth of a cupful of water. Heat until well browned, stirring constantly even after the dish has been taken from the fire, and until the danger of burning in the hot dish is passed. Before the mixture hardens, add hot water and cook until it is about the consistency of thick sirup. Bottle and save for use as needed.

## MEAT, FISH, POULTRY, EGGS, AND MEAT SUBSTITUTES.

The other foods included in group 1 with milk (considered by far the most important of them all for children) are meat, fish, poultry, eggs, and meat substitutes.

In some families children do not get enough meat and eggs; in others they get too much. A good general rule commonly followed is to give a child 2 years old or over, an egg every other day and about the same amount (2 ounces) of meat, fish, or poultry on the days that come between. If for any reason meat is omitted from the child's diet special care must be taken to see that other suitable foods take its place—preferably an extra amount of milk or eggs.

Broiling and roasting are the best methods of preparing tender meat. Tough meat should be stewed or prepared in a fireless cooker, or first chopped and then broiled.

It is important to teach children to chew meat and other foods properly.

Fried meats, particularly those which are pan fried or cooked in a small amount of fat, should not be given to young children. One reason for this is that they are likely to be overcooked and tough, at least on the outside, and so are likely not to be properly chewed and to be swallowed in large pieces. Another reason is that the fat used in frying and also that which fries out of the meat is likely to be scorched and changed in composition. When this is the case, it is almost certain to be harmful.

Some recipes for cooking meat for children follow:

*Broiled chopped meat.*

Many cuts of meat too tough to be broiled whole may be prepared very satisfactorily by being chopped, salted, and broiled. Allow about one-half teaspoonful of salt to a pound of meat. For very little children the meat should be scraped instead of being chopped, for in this way the connective tissue is taken out. An egg or a little milk may also be added. The most important point is careful handling, for if the meat is pressed together it becomes tough and hard. If a wire broiler is used, the cakes should not be squeezed between the two sides. To avoid this, lay them on top of the broiler and turn them with a knife and fork.

*Meat stews.*

Stews made out of meat and vegetables offer a very great variety of dishes, good in themselves and good also because they encourage the eating of bread. The meat used should, of course, be in good condition, but need not be from a tender cut. The lower-priced cuts may be used with good results, provided they are made tender by long, slow cooking. Any vegetable may be added, including the tougher parts of lettuce, and the leaves of celery. Rice, barley, macaroni, or even crusts of stale bread may be used in the stew to give variety. A stew containing a little meat, with one or more vegetables and a cereal, comes near to supplying all the needed foods, other than milk.

*Meat stew.*

|   |                               |
|---|-------------------------------|
| 2 pounds of one of the cheaper cuts of beef.                                      | Salt.                         |
| 4 cups of potatoes cut into small pieces.   | $\frac{1}{2}$ onion, chopped. |
| $\frac{3}{4}$ cup each of turnips and carrots cut into $\frac{1}{2}$ -inch cubes. | $\frac{1}{4}$ cup of flour.   |

Cut the meat into small pieces, cover with boiling water, boil for five minutes, and then cook at a lower temperature until the meat is tender. This will require about three hours on the stove or five hours in the fireless cooker. Add the carrots, turnips, onions, and salt during the last hour of cooking, and the potatoes 20 minutes before serving. Thicken with the flour diluted with cold water. If the dish is made in the fireless cooker, the mixture must be reheated when the vegetables are put in.

There is much to be said in favor of keeping a soup pot on the stove all the time, provided great care is taken not to allow the contents to grow stale. Into this pot can go clean portions of uncooked food and also clean foods left from the table, such as meat, milk, mashed potatoes, or other vegetables, crusts, cold cereal mushes, and even fruits. Soups made from such materials may not have great nutritive value, but, like those made out of materials bought for the purpose, they encourage the use of a large amount of bread, particularly if carefully seasoned.

#### *Poultry.*

Chicken or turkey can be used for variety in a child's diet and are palatable stewed and served with rice. If roast chicken is used, select portions which are tender. It is well not to give a young child either highly seasoned stuffing (dressing) or rich gravy.

#### *Fish.*

The use of cured fish, fresh fish, and oysters in stews has been spoken of above. Boiled or stewed fish is also good for variety.

#### *Meat substitutes.*

Milk and eggs, as stated above, are common meat substitutes. Among vegetable foods, dried beans, peas, lentils, and cowpeas, which are often classed together and called legumes, are the best substitutes for meat in the diet of older people, chiefly because they have large amounts of nitrogen needed for muscle building. In this respect they have some advantage, though not a great one, over cereals. Beans and the other legumes are not to be recommended for young children except when milk, meat, eggs, fish, and poultry are not to be obtained. When used they should be cooked until they are reduced to a mush. Since the skins are likely to be tough it is well to put the cooked legumes through a sieve.

A general recipe for soups made from beans, peas, lentils, cowpeas, and other legumes follows:

#### *Soup from dried beans or other legumes.*

|   |                            |
|---|----------------------------|
| 1 cup dried legumes.                      | 2 tablespoonfuls of flour. |
| 1 quart of water or soup stock.           | Salt and other flavoring.  |
| 2 tablespoonfuls of butter or savory fat. |                            |

Soak the dried legumes in water over night. Drain, add the water or stock, cook slowly on top of the stove for three hours or in a fireless cooker for four or five hours or until tender. Renew the water as it boils away. Strain and thicken with the fat and flour rubbed together. These soups may be flavored in many ways. Sometimes a tomato, onion, a few celery tops, a sprig of



parsley, or a mixture of vegetables is boiled with beans or peas, or just before serving a few drops of onion juice, a little celery salt, or one-half level teaspoonful of curry powder is added.<sup>1</sup> Sometimes the water used is that in which ham or other meat has been boiled, but in such cases care must be taken not to have the liquid too fatty.

### *Eggs.*

Eggs are especially useful food for young children. The chief point to remember in preparing them for children is that they must not be overcooked or they are likely to cause indigestion, as experience has shown. Everyone knows how the heat of cooking hardens the egg, and it is easy to understand why the digestive juices might have difficulty in penetrating such hard substance as the white of a hard-boiled egg. Overcooked yolks are also thought to be hard to digest. However, when eggs are cooked in the shell, the heat reaches the white before it does the yolk, and so there is more danger of the white being overcooked than of the yolk. The best ways of serving eggs for children are poached, soft-boiled, or coddled, though they may be scrambled for a change if one is careful not to scorch the fat used or to overcook the egg.

### *Coddled eggs.*

Many means have been suggested for cooking eggs in such way that the yolks will be cooked and the whites will not be overcooked. One of the most satisfactory is by coddling, which is done as follows: Allow a cupful of water to each egg, bring the water to the boiling point, remove it from the fire, put in the eggs, cover the dish closely, and leave the eggs in the water for about seven minutes. There is some uncertainty about this method, for eggs differ in weight and also in temperature at the time the cooking begins. On the whole, however, this method can be depended on more than others. Good results can be obtained by pouring hot water over the eggs, if the same dish with the same amount of water is always used, but each cook must make her own rules.

## FOOD GROUP NO. 2. BREAD AND OTHER CEREAL FOODS.

Cereal foods of some sort are used by children practically all over the world. Bread is the commonest cereal food in this country, though cereal mushes are also very generally used. Well-baked bread and thoroughly cooked breakfast cereals are both good for children and with milk should make up a large part of the diet. These two foods, bread and breakfast cereals, provide almost the same kinds of nourishment. Bread may therefore take the place, to a certain extent, of cereal mushes and cereal mushes may take the place of bread, but neither can take the place of milk, meat, eggs, fruits, and vegetables.

An ordinary slice of bread (a  $\frac{3}{4}$ -inch slice cut from an ordinary loaf) is equal in food value to about half a cupful of boiled or steamed cereal and to about a cupful of puffed or flaked cereal. The mother who must feed her child very economically should calculate the cost of each and decide which is cheapest.

The relation of food to the condition of the bowels is an important matter. Grains, particularly those containing the outer or branny layers or coats, are laxative; so, too, are such mildly acid fruits as apples, oranges, and grapefruit. So far, therefore, as the important matter of preventing constipation is con-

<sup>1</sup> Strong seasoning is not suitable for the younger children.

cerned, coarse grains and mildly acid fruits serve the same purpose. When fruits are to be obtained in abundance, the kind of cereal served is not of great importance. When they are not, the coarser cereals should be used. In the case of both cereals and fruits, it is possible to overdo. Sometimes the coarser parts, such as bran and skin, do not agree with the child and, under these circumstances, they should be removed from the food before it is served. Some mothers find it necessary to strain oatmeal porridge, for example, and to remove the skins of apples.

#### BREAD.<sup>1</sup>

The yeast-raised bread given to young children should be at least a day old or should be toasted or twice baked. Most hot breads are likely to be swallowed in large pieces and are therefore not desirable. Hot breads which are almost all crust, like thin tea biscuits or crisp rolls, are least likely to cause trouble.

#### MILK TOAST.

This very common bread dish has been discussed under milk. (See p. 17.)

#### TWICE-BAKED BREAD.

Bread cut or torn into small pieces and heated in a very slow oven until thoroughly dried and very delicately browned is good food for children. The warming oven of a coal stove is about hot enough for this purpose. In the case of gas ovens it is often difficult to get the gas low enough without having the door open a little way. The advantage of tearing instead of cutting the bread is that it makes it lighter in texture and easier to eat. The crust can be torn off from all but the ends of a loaf of bread in one piece. This crust should be torn into pieces about 2 inches wide. The inside of an ordinary loaf of bread will make 16 pieces of convenient size. Tear first across the loaf and then tear each half into eight pieces. It is usually necessary to make a small cut first in order to start the tearing. It is well to keep the crusts separate, as otherwise they are likely to get too brown. Such bread will need to be reheated before being served unless it is kept in a warm place, like a warming oven.

The above is also a good way to use stale bread. Some people crush it and use it with milk as a breakfast food.

#### BREAKFAST CEREALS.

Cereal mushes and other breakfast cereals are very common foods. Almost all of the well-known grains are used for this purpose, and there are many such products, owing to differences in manufacture.

Except when used for dessert, cereal mushes and ready-to-eat cereals should be served with milk and with very little, if any, sugar. If the cereals are heavily sweetened, children are likely to eat so much that they neglect other and much-needed foods. If carefully salted, mushes are more likely to satisfy the taste without sugar than otherwise. Well-cooked cereals with milk or stewed fruit or a little molasses, sirup, honey, or sugar make good desserts for dinner, lunch, or supper. If preferred, dried fruit, like dates and raisins, may be cooked with the cereal to sweeten it and to give flavor.

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<sup>1</sup> See Bread and Bread Making in the Home, Farmers' Bulletin No. 807, for recipes.

## COOKING CEREAL BREAKFAST FOODS.

It is hard to give general cooking rules for cooking cereals, for there are so many kinds, but it is safe to say that there is no danger of overcooking and much danger of undercooking them. Some grains need longer cooking than others; corn meal, for example, needs at least three hours and rice hardly more than half an hour. In general, whole grains, like whole wheat, or grains more or less finely broken, like cracked wheat, require longer cooking (three hours at least) than more finely ground grains, such as farina (which should be cooked one hour at least). Breakfast foods made from grains with the outer coverings left on require more cooking than those with the outer covering removed—whole barley, for example, more than pearl barley. Many cereal foods, particularly the rolled and flaked types, have been partially cooked at the factory. These require less cooking in the home than those which have had no such treatment; but if they are to be served to children such cereals should be cooked at home for at least an hour. There are also cereal breakfast foods which have been still more thoroughly cooked at the factory, either by parching in addition to flaking or by some other special method. These are improved by putting them into the oven long enough at least to crisp them.

Oatmeal, corn meal, and many other granular cereals can be put directly into cold water and cooked satisfactorily in a double boiler without stirring, the method being particularly good in the case of corn meal, which is likely to be lumpy if stirred into hot water. A convenient method for cooking cereals is to mix with the usual quantity of water, bring to the boiling point, boil for three or four minutes, and then put into a fireless cooker and leave 10 or 12 hours. Porridge or mush made in this way must be reheated before serving.

The quantity of water required differs with the cereal. A cupful of rolled oats requires at least 2 cupfuls of water; oatmeal or corn meal, 4 cupfuls; and rice, 3 cupfuls.

A level teaspoonful of salt to a cupful of cereal will usually be right, but it is well to experiment a little with an unfamiliar cereal, since failure to salt mushes properly very often leads children to dislike them.

## FOOD GROUP NO. 3. BUTTER, CREAM, TABLE OIL, AND OTHER FATTY FOODS.

Fat is an important part of the food of children. This is not surprising, for it is found in considerable amounts in human milk, the natural food for babies. Butter, which consists chiefly of the separated milk fat, and cream, which is rich in milk fat and also in the other nourishing substances of milk are both wholesome. Salad oils of various kinds (olive, cottonseed, peanut, and others) may be given to children in small amounts. Those who are not used to table oil must often be trained to like it. This can usually be done by introducing it very gradually into the diet. A good way to serve it is on spinach and other greens or on tender salad vegetables.

There is more than an ounce of fat (at least  $2\frac{1}{2}$  level tablespoonfuls) in a quart of whole milk. If the healthy child is given a quart of milk, has butter on his bread, and meat or an egg once a day, he gets enough fat and that which he receives is in wholesome form. It is well, therefore, not to give such fatty foods as pastry, fried meats and vegetables, and doughnuts or rich cakes,<sup>1</sup> for in these the fats are not in so good a form for children, as experience has shown. If the child is constipated, the occasional use of cream or salad oil is desirable, for fat in abundance is laxative.<sup>1</sup>

<sup>1</sup> In some cases constipation may be due to too much fat in the diet. Dry and putty-colored stools may indicate an oversupply of fat.

Bacon or salt pork, cut very thin and carefully cooked, may be given occasionally, but thick pieces with much lean are not desirable. In preparing bacon or salt pork it is very important not to burn the fat. To avoid this they should be cooked in one of the following ways: Put the slices on a broiler or wire frame over a pan; place the pan into a hot oven and cook long enough to remove most of the fat. Or keep a pan on purpose for cooking bacon on top of a stove and let the fat which fries out of it collect in the pan, taking care that none is burned. In time so much fat will collect that bacon can be dropped into this hot fat and will be less likely to burn than if placed on a hot pan.

#### FOOD GROUP NO. 4. VEGETABLES AND FRUITS.

Two very valuable kinds of food are here grouped together, namely, vegetables and fruits. This is done because they are similar in that both kinds supply iron, lime, and other mineral matter to the body, and also mild acids (not always in such amounts that one can taste them), such as those which are found in oranges, apples, and tomatoes.

Vegetables are an important but often a neglected part of a child's diet. They should be served at least once a day, as they help to keep the bowels in good condition. Several of the ways of accustoming the child to the taste of unfamiliar vegetables have already been suggested here. They may be used as flavoring for soups and stews, may be added to milk or meat stews, or served with meat gravy. If gravy is used, it should not be too fat nor made with scorched fat.

Young children may be given the young and tender parts of celery and lettuce, a satisfactory way of serving being in the form of sandwiches. For this purpose they should be slightly salted and the celery should be chopped or cut into small pieces.

All vegetables, whether served raw or cooked, should be washed with great care. Large vegetables like potatoes and carrots should be scrubbed with a brush. Greens should be washed leaf by leaf under running water, or in a large amount of water. In the latter any sand which clings to them is likely to sink. To prevent it from again getting on the vegetables lift them from the water instead of pouring the water off.

Most vegetables when served as a separate dish should be either steamed, boiled, baked, or stewed. If the supply of fresh vegetables is not generous, the juice in which they are cooked should be used with them as far as possible or put into soups or stews.

Experience has shown that vegetables, particularly green vegetables, are at their best when cooked until tender, but not until completely wilted. Spinach requires cooking from 20 to 30 minutes.<sup>1</sup>

Vegetables should be served either quite simply or with a little milk, cream, or butter, to improve or vary the flavor. As said before, oil may be served on greens instead of butter. These simple methods are better than complicated ones like frying or scalloping. For the smallest children such vegetables as greens should be finely chopped, and if the tougher portions of other vegetables, the skins of green peas, for example, are found to disagree with a child, these portions should be removed by putting the cooked vegetable through a sieve. No such vegetables as raw radishes or cucumbers, which might easily be swallowed in large pieces, should be given to small children.

<sup>1</sup> Recent experiments show that when spinach is boiled it loses twice as much of its mineral constituents as when it is steamed. "Some analyses of vegetables showing the effect of the method of cooking," in *American Journal of Diseases of Children* (July, 1917), pp. 34 to 40.

Fruits, which with vegetables make up group 4, are also very important in the child's diet. They supply mild acids, and they are important for their flavor, for their laxative effects, and no doubt for other reasons also. This laxative effect is well recognized in the very general use of orange juice, prunes, and apples. Then, too, the fruits, like the vegetables, have mineral elements which the body requires.

Fruits should be served in some form at least once a day. In general, the same rule should be followed as for vegetables in deciding in what form they should be served. Fruit juices and the pulp of cooked fruit, baked apples and pears, and stewed prunes, for example, are safest. Whether the skins should be given depends partly on the age and health of the child and partly on the way the fruit is prepared. If the skins are very tender, they are not likely to cause trouble, except with very young children. When apples and pears are baked, the skins can be made tender by frequent basting.

#### FOOD GROUP NO. 5. SIMPLE SWEETS.

Simple sweets are such things as lump sugar, maple sugar, sirups, honey, and plain candy, and those foods in which sugar is combined in simple forms with fruit juices (in lemonade, water ice jelly, etc.), with flour or starch, as in plain cakes (cup cakes, sponge cakes, cookies), and with fruit, as in jams, marmalades, and similar things. Sweets which contain much fat, like rich cakes and pastry, and foods which are made rich with nuts or dried or candied fruits, or those which are highly flavored or spiced, can not be classed as simple sweets.

Sugar is a desirable part of the diet, and the only objection which can be raised to its use in reasonable amounts in a mixed diet is that it is sometimes allowed to take the place of foods which come under the first four groups mentioned in this bulletin, and so spoils the child's appetite for those other important things. Under these conditions it is harmful, because its improper use has led to bad food habits. Sweets should not be given between meals or during the first course of a meal. Careful mothers who forbid their children eating candy at odd times sometimes give one or two pieces of wholesome candy as a "treat" with dessert at dinner.

#### A REVIEW.

In the foregoing pages some general principles which should govern the young child's diet have been stated and facts given about foods the child should have and about cooking them.

At the close of the day the mother might ask herself questions like the following to make sure that she has taken into account the things to which her attention has been directed:

Did each child take about a quart of milk in one form or another?

Have I taken pains to see that the milk that comes to my house has been handled in a clean way?

If I was obliged to serve skim milk for the sake of cleanness or economy, did I supply a little extra fat in some other way?

Were the fats which I gave the child of the wholesome kind found in milk, cream, butter, and salad oils, or of the unwholesome kind found in doughnuts and other fried foods?

Did I make good use of all skim milk by using it in the preparation of cereal mushes, puddings, or otherwise?

Were all cereal foods thoroughly cooked?

Was the bread soggy? If so, was it because the loaves were too large, or because they were not cooked long enough?

Did I take pains to get a variety of foods from the cereal group by serving a cereal mush once during the day?

Did I keep in mind that while cereals are good foods in themselves, they do not take the place of meat, milk, eggs, fruit, and vegetables?

Did I keep in mind that children who do not have plenty of fruit and vegetables need whole-wheat bread and whole grains served in other ways?

Did each child have an egg or an equivalent amount of meat, fish, or poultry?

Did any child have more than this of flesh foods or eggs? If so, might the money not have been better spent for fruits or vegetables?

If I was unable to get milk, meat, fish, poultry, or eggs, did I serve dried beans or other legumes, thoroughly cooked and carefully seasoned?

Were vegetables and fruits both on the child's bill of fare once during the day? If not, was it because we have not taken pains to raise them in our home garden?

Did either the fruit or the vegetable disagree with the child? If so, ought I to have cooked it more thoroughly, chopped it more finely, or have removed the skins or seeds?

Was the child given sweets between meals, or anything that tempted him to eat when he was not hungry?

Was he allowed to eat sweets when he should have been drinking milk or eating cereals, meat, eggs, fruit, or vegetables?

Were the sweets given to the child simple, i. e., unmixed with much fat or with hard substances difficult to chew, and not highly flavored?

Was the child made to eat slowly and chew his food properly?

A young child may be considered well fed if he has plenty of milk, bread, and other cereal food; an egg once a day or its equivalent in flesh foods; a small portion each of carefully prepared fruits and vegetables, with a small amount of sweet food after his appetite for other foods is satisfied. If there is too much or too little of any of these, his diet is one-sided.

#### DRINKS.

The growing child needs a great deal of good drinking water, particularly in the hot weather, and should be offered water even when he does not demand it. Tea and coffee should be absolutely forbidden to all young children.

#### FOOD HABITS.

With few exceptions children may be taught proper food habits. Children know nothing of foods in the beginning save those which are set before them and have to learn to eat every article of food. If from the first wholesome and suitable foods are served without comment or question, most children will like them, and thus normal dietary habits will be established.

In some cases a child may exhibit an "idiosyncrasy" toward a certain food—such as eggs, for example—which he may not be able

to eat, but in general he can be and should be taught to eat all wholesome foods. A child who insists that he does not like this or that food may not be perfectly well or his appetite may have been perverted by one cause or another. Others may have had their tastes limited by the objection of the members of the family to certain articles which are consequently almost excluded from the table. It is also quite possible that a child's distaste for certain foods may result from poor cooking, scorching, overseasoning, or other faults of preparation. For example, most children have a wholesome natural objection to pepper and sharp condiments and will not eat foods in which they are used. This may be sufficient to destroy their relish for such things as soups, vegetables, and meats. On the other hand, food may be so negative that it excites no pleasure in eating. It is important to have the ordinary foods appear on the family table so seasoned and flavored as to make them attractive, palatable, and capable of exciting a copious flow of the various digestive juices. Flavorless, badly cooked, unattractive, and unappetizing food will be poorly digested. The pleasing appearance of food and an agreeable manner of serving it have much to do with the pleasure of eating it.

After the third year three good meals a day will usually suffice. The habit of lunching or nibbling on candy or cake between meals tends to destroy the natural appetite and to make a child indifferent to his regular meals, and leads to indigestion and malnutrition. If the interval between dinner and supper is very long, a light lunch consisting of milk, or bread and butter, ripe fruit, or other light food may be given halfway between these meals.

Meats should be cut fine, vegetables mashed or strained, and seeds and skin removed from fruits for the youngest children.

From the first the child must be taught to chew his food thoroughly and must be continually watched to see that he does not fall into the habit of eating too fast and swallowing large mouthfuls without sufficient mastication. To guard against this habit, pleasant conversation and laughter should be encouraged at the family table, and children should learn from the example of their elders to make the mealtime a happy one. No child should be permitted to frown or pout at the table or to complain about his food, provided the meal offered is ample and satisfying.

If a child will not eat he should not be urged to do so, nor should he be tempted with indigestible or unsuitable foods when he refuses the ordinary articles. The lack of appetite may be due to many causes, but a child in health should be able to eat simple, well-cooked food of pleasant variety at the three regular meals of the day. Marked or long continued lack of appetite, or freakish desires—as,

for example, the longing for vinegar or sour fruit—may indicate illness, and such a child instead of being scolded or nagged, which alone is sufficient to spoil the appetite, should be examined by a physician. Poor teeth or lack of teeth may cause enough pain to the child to diminish his appetite. Constipation or any form of illness may have the same effect.

If there is some wholesome article of food which the child persistently refuses and which seems essential to his well-being, a small portion of this food, perhaps in a new disguise, may be given first at the meal and other desired articles withheld until the child has eaten some of it. But taste and appetite are more successfully cultivated when they are noticed least, and the very effort to make a child eat something he does not fancy may serve to establish an even greater distaste.

The child should be taught proper table manners, but if he is to eat properly, his table and chair must be of the right height and his utensils small enough so that he can use them easily. After the high chair has been outgrown a child needs a dining chair high enough to bring his elbows nearly on a level with the top of the table, and provided with a foot rest.

#### CLOTHING.

Children's clothing should be simple and light in weight and should afford perfect freedom of movement to every part of the body, so that all forms of healthful play may be indulged in without discomfort. It is a grievous invasion of one of the inherent rights of childhood to dress a child in such a way that he must consider his clothing during his hours of freedom.

#### NUMBER AND KINDS OF GARMENTS.

At the beginning of the third year the child's clothing consists of a shirt, a pair of drawers, or a combination; a soft waist to hold drawers and garters; shoes, stockings, and garters; and a simple outside garment, like rompers, overalls, a one-piece kimono slip, or an apron. Overalls may be made of denim or gingham. The one-piece kimono dress is cool and easy to make but is apt to tear under the arm unless very loose. If desired, bloomers of the same material as the outer dress may be worn. Petticoats are unnecessary save under thin dresses and are not needed under rompers or when bloomers are worn.

Diagram I shows an outline sketch for the pattern of a useful little play dress for young children.<sup>1</sup> It is cut with an extension flap on both the back and front at the bottom. These two flaps are

<sup>1</sup> Courtesy of Mrs. M. O. Lorenz, Washington, D. C. See p. 31.



buttoned together between the legs, leaving ample room for the other garments. The advantages of this garment are that it is easy to make, easy to iron, permits the easy change of diapers, and saves the child from the many falls and accidents due to loose skirts.

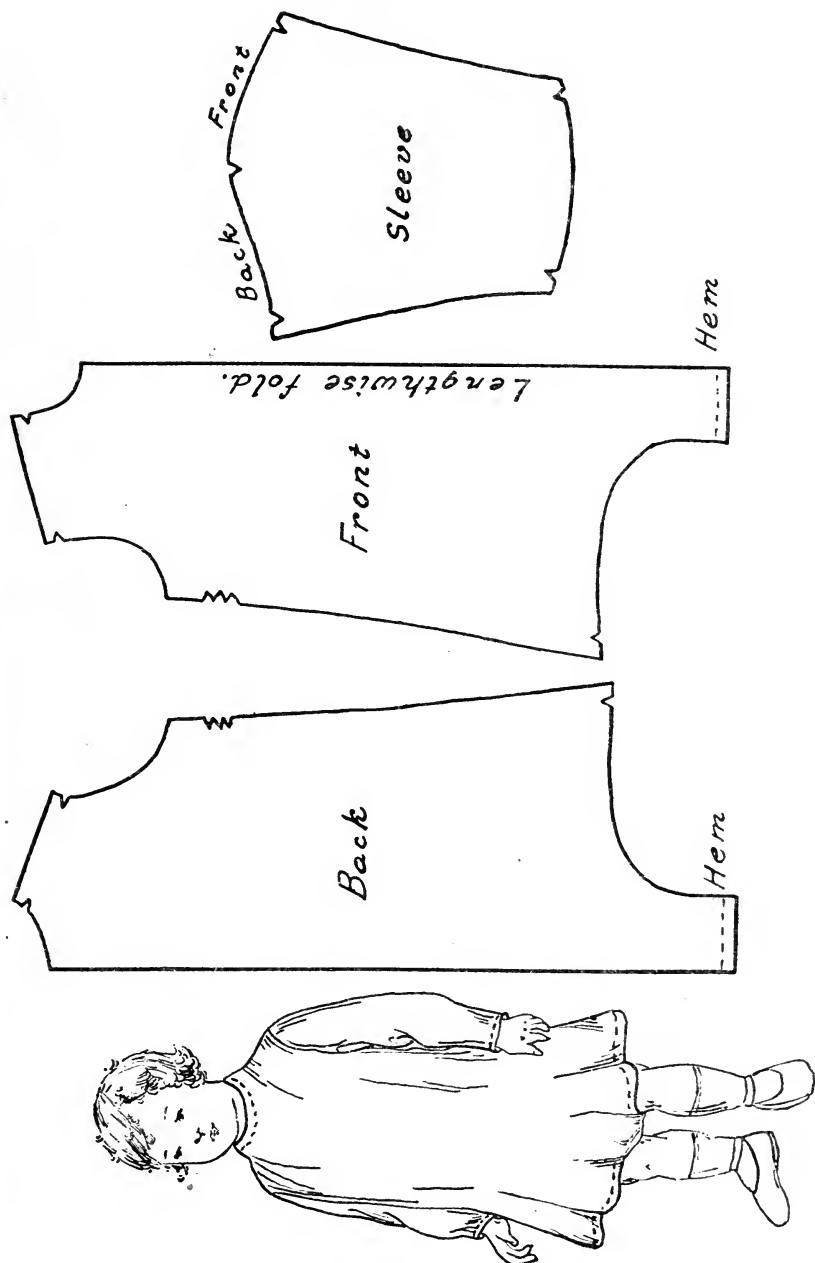


DIAGRAM I.—Simple dress.

## MATERIALS.

Underclothing should be soft and porous. All-wool fabrics must be washed with great care to prevent shrinking and felting.<sup>1</sup> Cotton and wool or silk and wool garments have much of the warmth and softness of wool but do not easily shrink and harden if carefully washed. Shirts and stockings may be dried on stretchers to save shrinking. All-cotton undergarments are far easier to wash than wool ones, and many mothers prefer to use them, adding the warmth necessary for cold weather by having the child wear a light-weight sweater either under or over his apron. A child of this age should have no clothing that can not be washed. For this reason cotton materials are most practical. Mothers disagree as to the comparative merits of white and colored clothing. One of the advantages of white garments is that they may be boiled, thus greatly reducing the amount of rubbing necessary to get them clean; on the other hand white dresses are soiled very quickly. It must be remembered that while white or light colors show the soil more plainly there is just as much actual soil on the darker garments. Light shades, such as blue, green, lavender, and pink, are apt to fade unless they are washed with special care. Gingham often shrink badly in washing. Such materials should be shrunk before making up. Seersucker and crinkled and crêpe materials of many kinds have the great advantage of needing no ironing and are very popular materials for children's everyday clothes. These rough materials are hot and if used for summer wear in warm climate should have short sleeves and round neck to avoid chafing the skin of the arms and neck. Percale, galatea, madras, and the better grades of gingham are among the popular cotton materials for children's clothes. For hot weather almost any of the thin materials may be used. Cotton crêpe wears well and requires no ironing. Loosely woven fabrics wash easier than the hard, tightly woven materials.

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<sup>1</sup> *Washing woollens.*—Use one 5-cent cake of white soap to 1 quart of water for one pair thick woolen blankets. Shave the soap and let it stand in water overnight. Then heat until soap is dissolved. Add 1 cupful of borax. Put this mixture into several pails of water (cold) and pour over blankets, adding enough water to cover and let them stand for about 24 hours. Rub any spots that may remain, then wring out the blankets and rinse twice in cold rain water. Wring out and dry. When almost dry the blankets should be brushed to raise the nap. For small pieces of flannel, lingerie, waists, lace, children's fine dresses, etc., use 1 cake of shaved white soap to 1 quart of soft water. Heat until dissolved. Pour it into a 2-quart jar and fill up the jar with cold soft water. Use 1 heaping tablespoonful of this solution and 1 tablespoonful of borax to a basin of water. Dissolve the borax in hot rain water until no lumps remain and put into the soap solution. Fill the basin with cold rain water and put in materials to be washed. Let them stand over night. At some convenient time rinse them twice in cold rain water. Wring them out and dry in the open air. "The Child in Health," Dorothy Reed Mendenhall, M. D., Correspondence-Study Division, Home Economics Extension Service, University of Wisconsin.

## NIGHTGOWNS.

Summer night wear should be thin and soft. The gowns may be made of soft-finish crêpe, nainsook, long cloth, or thin muslin. The neck should be cut round and the sleeves should be loose and short. For winter gowns heavier materials may be used. Outing flannel is much favored because of its warmth and softness, but mothers must remember that many children have been seriously burned because of the inflammable nature of these materials. A spark from an open fire or from a carelessly thrown match is often sufficient to set fire to a child's garment. The greatest care must be used to guard against this danger. Part-wool flannel may be used, or heavy cotton twill with fleeced lining. Ready-made night wear having legs and feet may be bought, which is both warm and soft and will keep the child completely covered. Draw strings may be run in the hems at the bottom of the garment and in the bottoms of the sleeves, to be drawn up after the child is ready for bed. In the coldest weather it may be necessary to have the child wear a shirt under his nightgown, but the day shirt should always be taken off and a different one used at night. If a woolen sleeping bag is used, the winter gown may be of cotton material.

## WRAPS.

Children's coats and all garments intended for out-of-door wear in winter should be soft and warm and sufficiently light in weight to permit perfect freedom of motion. Rough-surfaced woolen materials, somewhat loosely woven, will be warmer and at the same time lighter in weight than those which have a hard, smooth finish. A comparatively thin material, like serge, may be used for coats if an interlining of flannel or wool wadding is used to give the necessary warmth.

Summer coats may be made of any washable material desired. Pongee (a washable silk) and challi (a soft washable wool material) are both excellent for coats, but many of the white cottons may be used for the same purpose.

## AMOUNT OF CLOTHING.

It is perhaps needless to say that climate, season, and local conditions will dictate the amount of clothing a child should wear. In very cold winter weather every part of the body from the neck downward should be warmly clad and the clothing so distributed that all parts of the body are equally warm. The habit of permitting young children to wear short socks when the temperature is well toward freezing controverts all the ordinary rules of health.

It would be just as reasonable to send a child out in cold weather with bare arms as it is to send him out with the calves of the legs exposed. It is difficult to reconcile such a custom with reasonable prudence.

Children are sometimes dressed so warmly in winter that undue perspiration results and they take cold at the slightest exposure. If too lightly dressed the child will have cold hands and feet, blue lips, and a pinched appearance. A mother must use her common sense and make whatever changes are indicated by the child's condition. If his face is flushed after playing about the room for a few moments, or if the sweat shows about his head and face, and especially if he becomes fretful and impatient for no apparent cause, it is very likely he is too warmly dressed. Delicate or convalescent children require warmer clothing than the robust.

In excessively hot weather it is hardly possible to dress a child too lightly. Only the fewest and thinnest garments should be worn while the heat lasts, but the child must be guarded against a possible chill when the temperature suddenly falls.

#### HATS AND CAPS.

A child may go bareheaded much of the year, but in summer a simple, light-weight straw or cloth hat is necessary to protect the head and face when the sun is very hot. For winter wear a soft tam-o'-shanter of wool or velvet or some equally soft little cap which stays on and fits closely down about the ears and neck is most suitable. Stocking caps are comfortable for the coldest weather, but to wear these woolen caps indoors is dangerous. Mothers should instruct their children, boys and girls alike, to remove both their caps and coats when they come into a warm room to stay for any considerable period. Waterproof coats, boots, and overshoes should be removed on coming indoors.

#### SHOES AND STOCKINGS.

The human foot is a delicately adjusted mechanism of bones, ligaments, muscles, nerves, and blood vessels which in the growing period is very easily distorted or thrown out of balance by continued pressure of badly fitting shoes or by lack of attention to the beginning of trouble. It is impossible to measure the handicap which "flat foot," with the resulting inefficiency, imposes upon the human race, but that it is great enough to warrant the taking of all the pains necessary to prevent it is beyond dispute.

Children's shoes should be fitted on a last which conforms to the natural shape of the foot. Shoes that are too short have a tendency to produce enlargement of the joints of the great toe by pressing

against the end. Shoes that are too loose rub blisters and callosities on various parts of the feet. Those that are too tight give rise to corns, and those that are too pointed bend the toes toward one another and spoil their shape, while those that are not properly fitted at the instep fail to afford the necessary support to the arch and the ankle. Unfortunately custom or fashion is often allowed to dictate the sort of shoes that children shall wear, and it may be hardly possible to find the right kind of shoes in some communities. Recent observation of the stores in certain small towns showed that the children's shoes most in use were made of patent leather with narrow toes and thin or medium soles. The mothers complained that they could not get anything else. The dealers stated that they carried the kind of shoes that were demanded by their customers. The obvious remedy would appear to be for the sensible mothers to invite their shoe merchants to a conference on the subject, explaining plainly why they object to the shoes furnished and what kinds they desire. Certainly every merchant would be willing to make an effort to supply the demand if he understood it.

#### FITTING THE SHOES.

The child should, whenever possible, be taken to the shop to have the shoes carefully fitted. When shoes must be ordered by mail, the measurement around ankle and instep should be taken, using an accurate tapeline.

It will be seen from Diagram II<sup>1</sup> that in childhood the inside line of the foot is nearly straight. When the child stands with his feet parallel they touch each other throughout most of their length. The outer edge of the sole curve outward naturally, and the shoe must provide room for this curve of the toes without pressing upon them. The outline of the foot should be drawn while the child stands on a sheet of white paper. The outline will probably be clearer if he wears his stocking, unless the stocking is too short, in which case it will make the outline too short and too wide. This outline and the ankle and instep measurements may be sent to the shoe dealer when it is necessary to order the child's shoes by mail. The shoe should be 1 inch longer than the outline of the foot and one-fourth inch wider. In ordering shoes in this way it is necessary to specify what sort of leather is desired, as, for example, bright or dull kid, or calfskin; or canvas, etc., and the color, as brown, black, or white. It is also wise to give some information as to the price of shoe desired. At the present time (1918) leather has risen in value so greatly that shoes made from leather are much more expensive than even a year or two

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<sup>1</sup> Courtesy of Dr. M. O. Lorenz, Washington, D. C. See p. 36.

ago, and various substitutes for leather, especially for shoe soles, are being tried with considerable success.

There are several excellent models for children's shoes on the market, under various trade names, which can be had either directly through local dealers, or by catalogue, if the purchaser is at a distance from the town. Patent leather, being covered with varnish,

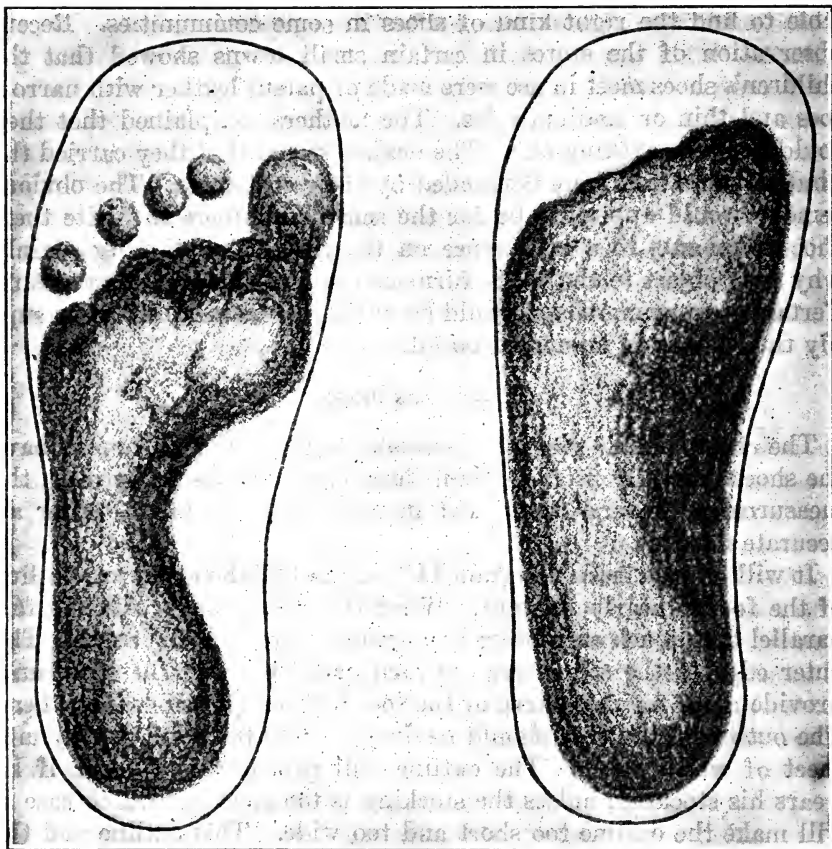


DIAGRAM II.—Outline of child's foot. Left, bare footprint of 3-year-old child; right, outline of stocking foot, same child. (Both showing properly shaped sole of shoe to fit this foot.)

is nonporous, and children who commonly wear patent leather shoes almost invariably develop some tenderness of the feet.

Winter shoes should have thick but flexible soles. It is no uncommon sight to see a young child walking on an icy pavement wearing thin-soled shoes without overshoes. Although he may be dressed in heavy woolen coat, cap, mittens, and leggings, he is not thereby at all protected against the chill that comes through the thin, dampened soles of his shoes.

Rubber or arctic overshoes or boots are necessary when the ground is wet or muddy or the snow is deep, but they should be removed as soon as the child comes into the house. Rubber-soled shoes are likewise unsuitable for regular wear unless there is an inner sole of leather

#### SLEEP AND REST.

##### AMOUNT.

The very young baby's life is a succession of alternate periods of eating and sleeping. He stays awake long enough to eat, then immediately goes off to sleep until he is hungry again. As the child grows the waking periods are prolonged, but at all stages the child has far greater need for sleep than the adult. Up to 6 years of age the child should sleep not less than 12 hours out of the 24—10 or 12 hours at night and often 1 or 2 in the afternoon. The nap should be taken until the child can no longer be induced to go to sleep in the daytime. It is a wise precaution to have all growing children rest for a while in the afternoon even if they do not sleep. Plenty of sleep is of special importance in this day when so many parents are nervous and high strung. Children of such parents, or those who are inclined to delicacy or any form of illness, are particularly in need of large amounts of sleep in order to give the body even more than ordinary opportunity to build up its weakened tissues and increase its resistance. Sleep should begin early in the evening and should continue until the child wakes naturally. To require children to wake and be ready for an early breakfast, regardless of their desire to sleep, is no longer held to be sound physiologically or otherwise.

##### CONDITIONS FOR GOOD SLEEP.

Healthy sleep depends upon many conditions. The bed must be comfortable and clean, and the room should be abundantly supplied with fresh air. The temperature should not be above 60° F., and may be much lower. The room should be darkened, but not oppressively so. Many children and not a few adults sleep much better if there is a faint light, such as may come from the moon, but no artificial light should be allowed to burn in the room all night. The body should be clean, the nightgown loose and comfortable, and the child should have had a light but sufficient evening meal. The complete evacuation of the bowels every day is of great importance to good sleep, as are also clear nose and throat passages. A child should sleep in a bed by himself and whenever possible in a room apart from the adult members of the family. Out-of-door sleeping is often a great source of health to children and a little ingenuity will make this possible at slight expense. If there are no sleeping

porches it is often easy to attach or extend them to roofs of one-story additions which are accessible to the second-story windows of the main part of the house.

The white painted iron beds or cribs in common use are easily kept clean and are very suitable for children. Directions for making the bed and the kind of mattress and covers to use are shown in the previous bulletin in this series<sup>1</sup> and need not be repeated here, as the same articles will be suitable for the child until he has outgrown them.

#### SLEEPING BAGS.

It is so difficult to keep a child covered, especially in cold weather, that many mothers have adopted sleeping bags for their children. These bags are most easily made by folding a small blanket in the middle and sewing up one end and the other side. At the top there should be strong hooks and eyes or snaps at intervals of a few inches. The child is put into the bag and the hooks fastened so as to hold the top of the bag around the neck and over the shoulders. If desired it may be left open the rest of the way so that the child can get his arms out or it may be hooked all the way. One way to prevent thumb-sucking is to fasten the bag so that the child can not get his hands to his mouth. The bag may be made of any material. An all-wool blanket is best in winter but muslin will answer for summer. It should always be sufficiently roomy so that the child can turn and move freely about inside. An added device is to fasten tapes to each of the lower corners of the bag and tie them to the corners of the bed or crib. When the child is thus fastened loosely within the bed, the ordinary bedcovers may be drawn over him without fear that he will kick them off or carry them off with himself as he turns. One great advantage of the sleeping bag is that the mother need not be disturbed at night to see whether the child is covered.

A child should always be completely undressed when he goes to bed, and none of the day clothes should be worn at night. If it is so cold that it is necessary for the child to wear a shirt at night a change should be made from the one he has been wearing. Day clothing should always be thoroughly aired and dried at night, ready to put on again the next day. Likewise, all night clothing should be well aired out of doors during the day.

#### PLAY AND EXERCISE.

From the first aimless flutter of the tiny red fist, through all the constant and varied activities of childhood, the child is slowly

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<sup>1</sup> See *Infant Care* (revised), p. 16.



gaining a mastery over his body by exercising it. The healthy child is in practically continuous motion during all his waking hours. He crosses and recrosses the floor many times a day. He climbs, reaches, stretches, runs, lifts, and carries small burdens, and quite without knowledge on his own part his muscles and bones are strengthened and developed and his growth is carried forward as nature intended.

Normal children who have room to play both indoors and out and are provided with suitable playthings will in these very early years get all the exercise they need; but a child whose freedom is necessarily limited by crowded living conditions suffers for want of wholesome natural exercise and should be taken to the parks or the open country as often as possible where he may run and romp to his heart's content and to the great advantage of his body. Play is a fundamental instinct, and even in the midst of the bleakest and most dispiriting surroundings the child, if left to himself, will find some form of play. Parents do not always realize that a child must play and that through play he is laying the foundation for a healthy adult life.

In not a few homes young children are given tasks too heavy for their strength, are kept at them too long at a time, and are made to carry responsibilities which should not be laid on them at so early an age. This does not mean, however, that children should do no work. Part of a child's education is to learn to take his part in the family life by doing his small tasks and rendering the small services which are quite within his powers, such as setting the table, wiping the dishes, running small errands about the house, picking up his own playthings, answering the doorbell, and other similar duties. Such work, graded to suit the child's age, is a pleasure if undertaken in a spirit of play. Beyond this, the young child's waking hours, save such as are necessary for eating and the care of the body, should be spent in natural and healthy play to the greatest possible extent.

#### OUT-OF-DOOR PLAY.

In a recent series of health conferences held in small towns many children were presented for examination who were plainly suffering from the lack of the active exercise that children get in playing out of doors. When questioned as to why the children were not kept out the mothers quite commonly replied that they would not stay out of doors alone and that the mothers did not have time to spend in this way. It is surprising to find how many parents fail to provide playthings or occupations which interest the children and keep them safe and happy even away from their elders. To provide

children with the material for happy and health-giving play requires no large outlay either of money or time, but it is often necessary to urge mothers to open the doors, both literally and figuratively, to the children.

For the younger children sand piles, safe swings, small gardening operations, playing in the snow, climbing, and running after a ball will afford much good exercise. As a child grows a little older swings, teeters, and many of the amusements offered on the public playgrounds are suitable. The simplest homemade apparatus is often more satisfactory than the most expensive because of the child's added joy of watching the construction and assisting in it.

For children under 6 there is probably no other one thing that gives more pleasure than a sand box. This requires only a load of clean "sharp" sand such as builders use in making mortar, but almost any kind will do, walled in with clean boards to save it from being washed away by the rain. Sand boxes may be built and used on porches or roofs. A sand box in the yard may be sheltered by a hedge or a clump of shrubbery from the sun or the street and is better built on a slight slope in order that there may be a natural drainage. If the soil beneath is clay, a drain made at the bottom of the slope by filling a hole 2 feet deep with broken stone will carry off the rain water. Sand boxes should be so located as to have the sunshine on them some parts of the day. It is difficult to keep such a box sweet and clean if the sand is mixed with soil or clay, but pure sand washed by the rain and dried by the sunshine is naturally disinfected. All the playthings needed for the sand box are some old spoons and a few small pails or tins. Baking-powder cans with covers answer very well. Flowers and twigs, clothespins, shells, stones, and acorns all enter into the making of sand-box gardens or villages, and most children will play contentedly for hours at a time in a sand box.

A swing so low that a young child will not be injured by falling out, a teeter board made by balancing a plank over a sawhorse, and a low ladder, with smooth rungs, fastened securely against some wall, are all excellent forms of play apparatus for the yard or porch.

Playing house, both in and out of doors, is a never-failing delight, especially to little girls. A large wooden box under a tree or in some sheltered spot is the basis for an astonishingly large establishment, to be furnished and decorated outside and in and with grounds and gardens about it. Any kind of play that is to have any permanent charm for a child must be one in which he can realize his own ideals and work out the plans of his imagination, and although the result may look very small or crude to the matter-of-fact adult it is perfectly satisfactory to the creator of it.

In the North, where the winter temperature is at times considerably below freezing, the out-of-door life of young children is necessarily limited to short periods, but except when the wind is very high or when the cold is excessive there are not many days when a child, if warmly clad, can not go out for a few moments. In the milder months and warmer climates only extraordinary winter conditions should be allowed to keep him under cover all day long. Children take delight in a mild snowstorm and also enjoy playing through a summer rain if there is no thunder and lightning. Rubber boots, raincoats, and storm hats make this sort of play feasible.

Since playing in water may be attended by danger, it is a privilege seldom granted; but where there is a clean, shallow bit of water, preferably a running brook, where children may build dams and dikes, with towns and villages on either side, perhaps connected by bridges, they are provided with a never-ending delight. Needless to say they should be clothed in such a way that they need not think about keeping anything clean or dry, but may enjoy the play to the full.

#### SWIMMING.

Swimming is an invaluable exercise, strengthening every part of the body, and whenever possible a child should be taught to swim, beginning as early as the fifth or sixth year. It should be undertaken very gradually, allowing the child frequent intervals of rest and permitting him to remain in the water only a short time at first, using great care to see that he is never frightened, even for a moment, and taking him out for a quick and thorough rub-down at the first sign of chilliness.

#### SKATING.

When the feet and ankles are in normal condition skating is likewise excellent exercise if the child does not become overtired and overheated or carry the sport to great excess.

#### BICYCLING.

Bicycling is a favorite sport and an excellent exercise. A flat, level saddle should be used, so adjusted that when the child sits in it with his legs extended the ball of the foot touches the pedal when it is at its lowest point. This is good exercise, but a child needs to be restrained from riding too fast or too long at a time. The handle bars should be in such a position that the child sits nearly upright, not stooping forward as many young people like to do.

#### DANCING.

Dancing is one of the best forms of exercise, although it is usually esteemed rather as an accomplishment; but if children dance out of

doors or in well-ventilated rooms at suitable hours, and under careful adult supervision, it becomes an invaluable form of gymnastics.

#### INDOOR PLAY.

Play material of a sort which best pleases children is at hand in nearly every home. The baby often finds more pleasure in a string of empty spools or a few clothespins than in the rattles and balls which have come from an expensive toyshop. As the child grows, articles and materials at hand, if properly utilized, will give great joy. All sorts of paper may be used for folding and cutting or for scrapbooks. Magazines furnish a wealth of pictures to cut out, to paint, or to paste.

Crayons, paints, pencils and paper, and a blackboard will not only afford much pleasure but will help to teach the child to write and draw in crude fashion at an early age and help to train eye and hand without undue strain and fatigue.

A printing frame and a supply of blue-print paper, on which may be printed the outlines of leaves and flowers, butterflies, other insects, and many natural objects, will afford hours of happy occupation to children old enough to do such work.

Wooden boxes may be used for stores, doll houses, forts, and the like, while chairs and tables will readily become horses, steamboats, stages, and a thousand other things. Old cotton cloth, torn into 2-inch strips and sewed together end to end, will make yards of reins enough to drive the "coach and four" which is so easily created out of the dining-room chairs.

The most successful playthings for a child are those which furnish the material out of which he may construct his own amusements, rather than those which amuse him but give him little to do. It is well known that many of the expensive mechanical toys are discarded after a brief acquaintance or are soon ruined in the attempt to find out what makes them go, because the child wants to do something rather than to be amused or entertained by a performance in which he has little part. Among the mechanical toys, however, railroads and trains of all sorts have a perennial joy for all small boys. With the tracks in sections and the different kinds of cars and engines he is able to construct his own systems according to his own ideas. Lead and tin soldiers, that can be marshaled to suit the will of their general, are favorites, and also horses, dogs, cats, and other animals, all of which lend themselves readily to many uses. All sorts of toy vehicles (such as wagons, carts, tricycles, and carriages), small brooms, carpet sweepers, and other articles for doll housekeeping are adapted to play in which the imaginative element is most important. Books, drawing, sewing, writing, and building

materials all have their place, and many of these are at hand in every home.

One of the best possible toys is a big box of plain, smooth, wooden blocks. They can seldom be purchased in the stores and must usually be sawed from planed lumber at a mill, by a carpenter, or by an ingenious parent. Mr. H. G. Wells, in his book *Floor Games*,<sup>1</sup> gives the following as the proper sizes for such blocks: Whole blocks,  $4\frac{1}{2}$  by  $2\frac{1}{4}$  by  $1\frac{1}{8}$  inches; half blocks,  $2\frac{1}{4}$  by  $2\frac{1}{4}$  by  $1\frac{1}{8}$  inches; and quarters made by sawing the latter in two. Almost any wood may be used to make these blocks except that which is likely to split or splinter or that which readily warps. In the northern and western States, maple and birch are usually available; in the South, short-leaf pine and yellow poplar; and in the Far West, the sugar pine or western white pine. Basswood, beech, or sycamore may be used. Blocks of hardwood, like oak, may be passed down from one generation to another. A box or chest to keep them in is almost a necessity. In addition to the blocks—from which no end of things can be constructed—Mr. Wells likes to have some play boards of the same wood, 18 by 9, 9 by 9, and 9 by  $4\frac{1}{2}$  inches. These boards make oceans, islands, States, counties, platforms, stages, and may serve also as roofs, walls, tents, and targets. There can hardly be too many of the blocks, but a hundred will make a fair start. Thus furnished, a child or a group of children will need only some parental suggestions, a word of encouragement now and then, with possibly some adjudication or disputed questions, to pass many happy hours in constructive play.

One of the favorite forms of play for all children is blowing soap bubbles, and on stormy days this will prove a great resource. Children must never be allowed to put other children's pipes into their own mouths. The following method of preparing the soapy water is excellent:

Put into a pint bottle 2 ounces of best Castile soap, cut into thin shavings, and fill the bottle with cold water which has been first boiled and then left to cool. Shake well together and allow the bottle to stand until the upper part of the solution is clear. Decant now this clear solution of two parts, adding one part glycerine, and you will have an ideal soap-bubble mixture. With some practice bubbles measuring 8 or 10 inches in diameter may be produced and a stand for them be provided by soaping the edge of a tumbler. If any old soft material is laid on the floor and the room divided into halves by a shawl or blanket hung across, the children may be arranged in two opposing camps and have a very good match game, devising their own rules as to size and number of bubbles, whether they shall be kept in the air by fanning, how much it shall count if a bubble falls or strays across the line, etc.<sup>2</sup>

<sup>1</sup> Wells, H. G.: *Floor Games*, p. 19. Small, Maynard & Co., Boston.

<sup>2</sup> Smith, Nora A.: *The Home-made Kindergarten*, p. 75. Houghton, Mifflin Co., Boston, 1912.

Another favorite game is modeling in some plastic material. Modeling clay may be bought, but a homely substitute is prepared by mixing one cup of flour and one-half cup of salt with a little water, making a dough out of which beads and other things may be molded.

#### THE PLAYROOM.

Too many homes, even those where there is no lack of means for the necessary margin of choice, are furnished without apparent regard for the needs or rights of children. Often it is hardly possible for a child to find a place to play or to use his own things without having to be continually warned against breaking or harming something. It is plainly unjust to any child to surround him with furnishings designed entirely to accommodate grown-up people and ask him to respect them unless there is somewhere a place in which his rights are supreme and where the grown-ups must pay equal respect to his possessions. For this reason there should always be some room, or at least a corner of the family living room, where the child may keep his own things and use them in peace.

The ideal rooms for children contain only such furniture as is necessary for comfort and convenience, and this should be simple and easily kept clean. Washable painted walls, bare hardwood or painted floors, simple curtains, and painted furniture are suitable. If wall paper is used, it should be inexpensive so that it can be frequently renewed. The windows should have opaque shades to shut out the hot sun and should be screened against flies and insects. The chairs, tables, beds, shelves, bookcases, and all the other necessary articles of furniture should be small and low. The continual effort to adapt the strength, size, and skill of children to the furniture of grown persons results in no little irritation, some of which might be easily relieved. A stool or hassock or even a low box on which he may stand will save much trouble. An ordinary kitchen table or common sewing table with the legs sawed off about halfway will afford untold comfort to the children at their work or play. It should be painted and should rest firmly on the floor. Pine kitchen chairs painted white, with the legs sawed off to the proper height, will serve the purpose. Added to this there should be some shelves or drawers where work and playthings can be kept within easy reach. Such an equipment as this in a sunny, cheerful room, with plenty of fresh air and warmed in winter to 68° F., will provide an amount of happiness to the children quite out of proportion to the cost.

#### CHILDREN AND ENTERTAINMENTS.

Children who are provided with the opportunity for natural and wholesome play at home have little need for entertainment outside.

The youngest children should be in bed and asleep by 7 p. m., and the older ones soon after, in order to get the amount of sleep they require for health. If taken to the motion pictures or other place of entertainment in the evening they not only lose sleep which is not usually made up but are apt to be overexcited and tired. The close air, the brilliant lights, the confusion and noise of public entertainments are all bad for children, especially for those who are inclined to be nervous and excitable. In addition, there is considerable chance of exposure to infectious disease in any public gathering.

Children's parties often seem to be given more to gratify the mother's desire to give her children pleasure than because they actually have that result, judging from the comments of the children—both hosts and guests. The attempt to play naturally in dress clothes which need to be taken care of, the eating of unusual foods at an irregular hour, and the necessity of remembering one's formal manners all contribute to the failure of such a party and to the disappointment of the mother.

On the other hand, it is a most important part of any child's training to learn to practice hospitality naturally and generously. He should be encouraged to invite his friends to his home, to share his play and his meals, and also to accept this simple and natural form of hospitality from others. This kind of entertainment involves no special dressing, no unusual food or irregular hours, and serves to teach children much that is wholesome for them to learn, including a respect for the rights and opinions of others.

#### DISCIPLINE AND EDUCATION.

The relation of parents to children and the position of the children in the home are quite different in the present day from those which prevailed when the saying "children should be seen and not heard" expressed the usual attitude of the adult mind. Suppression and repression are largely giving place to encouragement and appreciation in the family training of children. Under the old idea children were regarded as plastic material to be molded into what shape the parents desired; under the new it is believed that the chief duty of parents after providing food, shelter, warmth, and clothing for their children is to understand them, and to surround them with loving and sympathetic guidance while their development proceeds as nature intended. It is from the mother, most especially, that this guidance will come. A recent writer says:

\* \* \* It is of the average mother that I am particularly thinking, the mother who has had an average schooling, who has an average income; and I am thinking, too, of the mother even below this average, who has had little training and education, but who is naturally intelligent and who has just as keen sensibilities and desires and ambitions for her children as those who have

had more fortunate opportunities. It is to them that I wish to make clear, in the first place, that they, as parents, have in their power, in their hands, either to make or break the lives of their children. \* \* \* It is to them that I want to point out the importance of the first years, the tenderest, the most formative period of the child's life; to show how the commonplaces, what we consider the trivial things, affect him, how these very same commonplaces can be made to serve him and develop him; and how through a new attitude toward the little child the mother can not only vastly improve her child over what he otherwise would be but by so doing can make the most of herself and of her life and bring to herself a greater happiness and to society a greater service.<sup>1</sup>

To reach this understanding of child life perhaps the first essential is that parents shall "become as little children" themselves; that is, they must be willing to renounce the position of tyrant or dictator for that of "guide, philosopher, and friend."

Another essential is that the child shall have freedom of expression. Children can not be quite natural while under arbitrary rules or even when they are continually conscious of observation and inspection, however friendly this may be. Therefore the child must be free to exhibit his natural qualities, if the parent is to find out what those are. This does not mean that a child is to be given absolute control over his own actions, to do as he pleases at all times, but that when he is going about his own legitimate business of play or work he shall not be hampered by unnecessary restriction and repression.

A third essential is that the parent shall strive to recognize the inborn traits of character which lie back of behavior. For example, the high-spirited, energetic child who is full of eager curiosity in everything about him may exhibit at times fits of ugly temper, even viciousness, if he has no legitimate outlet for his natural inclinations; but high spirits, energy, and curiosity are all invaluable human traits when turned into proper channels, and the mother must try to look back of the violence and ugliness to find out why the fundamental qualities have been twisted into this unfortunate expression. Children are often described by their mothers as willful, sullen, unmanageable, sly, contrary, ugly, stubborn, or even stupid, without the least recognition of the fact that such manifestations are often only the result of the unhappy perversion of excellent inherent qualities. The sullen, silent child was perhaps unduly sensitive and needed not to be ridiculed, but to be gently led out of his morbid shyness into an interest in things outside himself. The capricious, ungrateful, selfish child may be rebelling against having too much done for him. Eye, hand, and brain may be suffering for occupation. The stupid child may be stupid only because the things which interest others do not interest him, and in some moment when he is off

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<sup>1</sup> Scott, Miriam Finn, *How to Know Your Child*, pp. 10, 11.



his guard the mother may catch a glimpse of him absorbed with interest in an undreamed-of field. To develop and expand this interest until he is no longer stupid or dull but may even go beyond his fellows, is often comparatively easy.

It therefore follows that to cope successfully with the problems of childhood parents must be able to recognize their own mistakes and to change their methods, if necessary, to fit the case.

#### HABITS.

We become "creatures of habit," but we are born entirely without habits, and it is as easy in the beginning to learn good habits as to learn bad ones; and in the plastic years of early childhood, when the child is receiving those impressions which will stamp the permanent pattern of his mind and character, it is most necessary to teach him habits which he will not have to unlearn when he grows older. The baby who has been properly taken care of throughout infancy has already learned something of the habit of regularity through the daily repetition of the routine events of his life. He has learned to expect his food, his naps, and his outings at about the same time every day, and, since these things come to him through mother or nurse, to obey to some extent such regular calls. As the child grows older his activities continually increase, his hereditary traits appear, and the simple routine of babyhood is complicated by the necessity of providing outlet for his developing energies and interests.

It is by no means a small matter to take care of a healthy, growing child, and if there are two or three to be taken care of at once it is not strange that the mother's nerves sometimes give way under the strain. The endless doing over and over of the same small things, which is the sum and substance of the physical care of the child, requires endless patience, and for this task—the greatest in the world—a mother must fortify herself by the best possible care of her own body, including proper food, sleep, rest, exercise, and recreation.

#### OBEDIENCE.

The young child should know no other way than to do what he is told. A lawless, ungovernable child, who respects neither the rights of others nor the authority of his elders, who rides roughshod over everyone about, who eats without regard to time or place, who gets his own way by crying or by stubborn insistence, is a nuisance to everyone concerned, and at the same time he is doing himself irremediable harm. Discipline begins in infancy, and throughout the whole period of childhood constant discipline—which is guidance, not, punishment—should surround the child, protecting him

from the formation of bad habits and teaching him fundamental lessons of self-denial and self-control.

Every child should be able to respect the authority of his parents and to look up to them as the fountainheads of wisdom and help, whose counsel he follows because he knows his father and mother are his best friends and not because he is compelled to do so through fear. But as a recent writer has said:

The ideal freedom behind the best methods of child training means freedom from unnecessary suppression, from thoughtless, unreasonable, unjust, unsympathetic guidance; it means freedom from blind, arbitrary direction; it means freedom to grow, to develop naturally and normally under constant, consistent, and thoughtful direction.<sup>1</sup>

The lack of regard for the reasonableness of children's wishes and the arbitrary and unreasoning suppression of them are among the common causes of bad behavior in children. Enforced and rigid obedience to the commands of the parent, arbitrarily given to-day and perhaps neglected to-morrow according to the mood or caprice of the mother or father, is almost certain to lead either to outright disobedience or to deceitfulness. Obedience viewed merely as an abstract virtue is not necessarily virtuous. In fact, it is often quite the opposite both in the resultant behavior of the child and in its effect upon his character. Some of the most obedient children have the least moral responsibility and are easily led into wrongdoing by others, because the habit of unquestioning and unreasoning acceptance of superior authority has been so thoroughly fixed in them in childhood that as they grow they have little independence of judgment or will power left to direct their own affairs. Parents have no right to exact from their children instant obedience save when the line of conduct insisted upon will either serve to protect the child from physical or mental harm, to develop his own character, will, mind, or judgment, and thus insure his ultimate welfare and happiness, or to protect the rights of others. A weary mother harassed beyond endurance easily falls into the habit of "nagging." It is very common to hear a young, nervous mother saying "don't" to the child so many times a day that to obey would be physically impossible unless the child were asleep. It is almost inevitable that the child in such a case will learn little or nothing of true obedience.

#### PUNISHMENT.

As long as rigid obedience is exacted there must be a penalty for disobedience. This penalty is often quite as arbitrary and meaningless as the command and, like it, may be given as the result of momentary feeling in the parent.

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<sup>1</sup> Scott, Miriam Finn, *How to Know Your Child*, p. 108.

Harsh punishment inflicted in anger relieves the parent's overcharged mind, but in most cases it serves no other useful purpose and, in the last analysis, often does irremediable harm. Spanking and whipping are the easiest forms of punishment and the least intelligent. The parent, angered by something the child has or has not done, vents his own fury in this way. There is little logic in such a punishment, and less justice. The chastisement is not measured to fit the scale of the offense; its severity depends largely upon the physical strength of the parent and the degree to which he is incensed. The animal rage which it creates in the parent weakens his self-respect, and the majority of parents are heartily ashamed of themselves after such a scene with a child. It is not conducive to comfort to know that simply because one is larger and stronger one has permitted oneself to inflict brute force upon a child. But the effect of corporal punishment is even more to be deplored for its effect upon the child. Leaving out of account the possible case in which lasting physical injury is inflicted, it will still be true that in most cases the child's rebellion against being overcome and made to yield to the superior strength of another engenders in him physical fear, anger, and hatred. In either case, the punishment has not only failed to accomplish its only legitimate objects, namely, to make the child sorry for what he has done and to give him a desire to do better, but has permanently weakened the relation which ought to exist between parent and child.

The best preventive of mischief is to provide the child with plenty of legitimate occupations, interests, and amusements. Idleness is the bane of childhood. Every normal child must have work for hand, eye, and brain, and if proper activities are not provided he will be sure to find others for himself. It must also be remembered that much of what critical adults term "mischief" is not such at all from the child's standpoint, but is merely the result of a perfectly normal instinct on his part which leads him to seek something to do. Parents should try to discriminate between deliberately bad behavior and that which is quite innocent of such intention, however annoying it may be in its results.

#### EDUCATION.

Much of a child's earliest education—often the most valuable and enduring part—is that which is unconsciously acquired at home, not by precept or teaching, but by imitation. From beginning of life the child is copying the sights and sounds about him. Thus he learns to speak his first words, and from that time on through his entire childhood he unconsciously imitates the language, manners, and emotions of the older people about him. He repeats the tricks of speech and manner which they constantly employ. If a child lives,

among people whose language is correct and agreeable, whose manners are pleasant, who show always a thoughtful consideration for others, and whose behavior is gentle and kindly, the child unconsciously acquires similar ways. On the other hand, if a child grows up among people who are scolding, faultfinding, complaining, or quarrelsome, something of such tendencies will almost surely persist, however much he may learn to abhor these qualities in later life; and such lessons in conduct and manners are probably never fully eradicated. Good manners are an invaluable asset to every person. Their root and foundation lie in unselfishness and consideration for the rights of others; and only the constant daily exercise of these qualities will give the children that charm of manner which is a delight in persons of every age.

A normal child is full of curiosity about everything in the world, and through his questions the parent has boundless opportunity to lay the foundations of a broad and practical education if the child's questions, even in babyhood, are met with respect and answered with truth. However trivial or stupid the questions may seem to the busy or impatient adult, they are all-important to the child, and if he can not count on sympathy and attention from his own family he will have missed something which can never be made up to him. It is not necessary that all questions should be answered at once, nor fully. If the mother is busy or tired, she can ask the child to come to her at another time when she has time to talk to him. Here, as in every other aspect of child care, according to the new vision of parenthood in which the parents are the companions and friends of their children, it is impossible to treat the child's questions with rudeness, ridicule, or untruthfulness. A child is quick to detect deceit. When dishonest or fanciful replies are frequently given him, there may grow up in his mind a disrespect for the opinions of his parents and a suspicion of their motives which will be fatal to the establishment of complete harmony at a later stage of life.

#### SEX EDUCATION.

Parents should be the child's first teachers in this, as in all other fields of education. When the child does begin to ask questions he should be given simple, honest, dignified, and sufficient answers. Even more depends upon the manner and behavior of the mother and father than upon the actual information given. If the child sees that his mother is interested, that she treats his inquiries with respect and answers them gladly, the foundation is laid for a cleanliness of mind which should persist and safeguard the child throughout life. One who is put off with subterfuge or with palpable evasion, or more especially one who is summarily silenced, may not return again with his question but will probably later find a readier informant in some

sophisticated companion of the street, school, or kitchen. If these natural questions are disregarded or evaded the child is quick to color his own concepts in the same way. He soon discovers that there are certain subjects which grown-up persons will not talk with him about, his curiosity is stirred, and he will not rest until he has found some sort of an answer to his questions. The tragedy of this building of reserve between child and parent appears not so much in these early years as 5 or 10 years later, when the protection and guidance of parents through the critical years of adolescence are so sorely needed but may be neither sought nor offered.

The child's first questions are almost sure to be as to where babies come from, and all mothers can answer this question honestly and directly by saying that the baby came from mother. Then if he pursues the subject he should be told that babies of all kinds, such as colts, lambs, kittens, rabbits, or puppies (using whatever illustration is most familiar to the child), as well as human babies, must have a warm, quiet place to stay while they are very little, and so the mother keeps the baby in a nice little home or nest or room under her heart, where no harm can come to him until he is strong enough to live outside. If a new baby is expected in the family or in a neighboring family, this will afford the best sort of an opportunity to tell the child what a mother is and how careful they must be of her while the new baby is growing.

In this first period, when the child's awakening curiosity embraces every fact which comes under his observation and when it is easiest to guide him into a clean and healthy view of all physical manifestations of life, it is important to begin to instill habits of personal cleanliness. Incidental to the bath the mother may mention that the sex organs must not be handled except to wash them, adding, if necessary, that boys and girls who play with their sex organs may not grow up as strong and healthy as they should.<sup>1</sup> Such hygienic advice should be given plainly and simply, without unnecessary stress and without opening the way for argument or discussion, and especially without rousing the child's curiosity and leaving him unsatisfied.

To avoid embarrassing situations the mother should make it plain from the first that it is not good manners to talk about these things with anyone except mother or father, explaining that other people will not be as much interested nor as well able to tell him what he wants to know; also that it is better to ask questions when one is alone with father or mother rather than at the table or when other people are about.

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<sup>1</sup> See *Infant Care* (revised), p. 45.

## HEALTH AND HYGIENE.

### CARE OF THE SKIN.

The skin is far more than a mere covering for the body. It is a vast organ of sensation and also the heat regulator of the body, radiating the bodily heat when the weather is hot and conserving it when the weather is cold. In hot weather its millions of tiny sweat glands pour out their droplets of moisture which cool the surface of the body as they evaporate; when exposed to cold they contract and prevent the escape of the heat. The skin is also an indispensable organ of excretion, discharging a great amount of waste material through the glands. If it is prevented from performing this function to any considerable degree, as when a large part of the skin is burned, the body can not live. Further, the activity of the capillary circulation depends in no small degree upon the condition of the skin. For all these reasons, therefore, it is most important to keep the skin clean and active.

Soap and water are the important agents of cleanliness, practically available to all. As far as the child is concerned, nothing else is required. Powder should be used only in minute quantities and only upon opposing surfaces, such as between the buttocks or in the armpits. Powder, creams, and ointments clog the pores of the skin and thus destroy some part of the value of the bath. Even soap rubbed directly upon the skin without being first dissolved to a lather in warm water does the same thing, and for this reason it must be thoroughly well rinsed out at the close of the bath. Ointments and applications are sometimes necessary in the cure or relief of various troubles, but when the skin is healthy and clean the less foreign matter rubbed into it the better.

### BATHS AND BATHING.<sup>1</sup>

Among the many services which the mother renders the child one of the most valuable is teaching him those ideals of personal cleanliness upon which health and self-respect are built. A child who learns to love a clean body, clean hands, teeth, nose, and mouth can never altogether forego them as he grows into manhood.

Busy mothers with several young children to keep clean, without modern bathing appliances it may be, and sometimes without an adequate and convenient water supply, find the children's daily baths a great burden. But even in the least favorable circumstances some sort of baths can be had.

<sup>1</sup> For special baths, including sea bathing, see *Infant Care* (revised), Children's Bureau Publication No. 8, pp. 23-26.

The small tub of tin or enameled ware or even an earthen or tin basin which has been used for the baby will answer for the child until he has outgrown it. In a house fitted with modern plumbing the small tub may be used inside the large one or placed on a board laid across the top of the set tub so that the mother will not have to bend over. Where these conveniences can not be had the child may learn to take his bath in a small tub. It should be placed on a low table or chair to suit the height of the child. The head and neck are first washed and dried, then the arms and chest; after this the tub should be placed on the floor with a piece of oilcloth under it, and while the child stands in the water the legs and other parts of the body are washed and the bath is finished with a quick rinsing of the skin by pouring a pitcher of tepid water over the whole body.

A hot bath, that is, with the temperature of the water at 100° F. or over, should rarely be given to children, and then only under careful direction. It is sometimes resorted to by physicians in certain illnesses, but children have not infrequently been seriously burned from being plunged by panic-stricken parents into water that was too hot when some emergency has arisen. A bath thermometer is an inexpensive convenience in the household.

Warm water, at 95° to 98° F., is used with soap to cleanse the skin of oily impurities and to remove surface dirt. Such a bath relaxes the muscles, expands the pores of the skin, and makes the child sleepy, and in most cases should not be given oftener than twice a week. The daily bath should be given in tepid water at about 90° F. Cool water, at a temperature of about 85° F., may be used after the warm bath to close the pores and stimulate the skin and to help rinse off the soap. The effect of a warm bath is weakening, and for this reason it should not be given too frequently, nor should the child be allowed to stay in a warm tub more than a few minutes.

To prevent taking cold after a warm or tepid bath, the child should be gradually accustomed to the cool douche. This may be accomplished by pouring or splashing cool water over his chest, neck, and arms as he stands with his feet in warm water. As he grows older he can easily learn to take his morning bath in cooler water, especially if a shower bath is available under which he can run for a moment. The effect of the cold bath, with the water from 65° to 40° F., is to drive the blood from the surface and close the pores of the skin. If the circulation is strong there is a quick reaction to this shock, and the blood returns to the surface with redoubled force, bringing a glow and a tingle to the skin. If the circulation is sluggish or the nervous force so low that there is no such immediate reaction, and the child shivers and his lips and fingers turn blue, the effect may be very injurious; or if the child seems weak and

languid after the cold bath it is unsuited to that particular child, and should be discontinued. With such children a tepid bath followed by a complete rubbing of the body, in the hope of increasing the power of reaction, will be more suitable. A rapid rubbing of the entire body with a towel which has been wrung out of cold salt water as dry as possible is a good substitute for the cool bath and gives a delightful glow and warmth to the skin.

If a child has cold feet habitually they should have a brisk rubbing every night, dipping them first in cold water in which a handful of coarse salt has been dissolved.

The room in which children are bathed should be warmed to a temperature of 72° to 75° F. in order to prevent the possibility of a chill after leaving the water.

Soap should be pure and mild. It should lather freely but should be completely removed after using. The lack of thorough rinsing and drying is responsible for much irritation of the skin.

A child needs a small wash rag, and one so soft and loosely woven that he can easily squeeze the water out of it. He should have his own towels and wash rags and be taught to hang them up to dry after using.

Old knitted underwear and old sleazy turkish towels cut into tidy pieces make excellent wash rags. Good rags are also made from white mosquito net folded several times and stitched together, making squares 6 or 8 inches each way. They must be washed and boiled to remove the dressing. Discarded net or thin lace curtains also make very serviceable cloths.

Children should be taught the great importance of clean hands. Many disease germs are undoubtedly conveyed to the nose and the mouth by the hands, and to prevent this the hands should be washed immediately after each visit to the toilet, before eating, and before handling foodstuffs of any kind, and particularly after using the handkerchief. Because clean hands are so important it should be made easy to keep them clean by having basins, towels, clothes brushes, and water easy of access. The table or washstand should be low enough so that a child can wash his hands without wetting his clothing. A box or stool under the washstand will save a great deal of trouble.

Personal cleanliness involves also care of the special organs, such as the eyes, teeth, nose, and ears. (See pp. 55 to 60 for directions.)

#### CARE OF THE HAIR.

The scalp should have the same care that the rest of the skin requires. It should be washed sufficiently often to keep it clean and active, but not often enough to remove all the natural oil. While the child has short hair the head may be washed once or twice a week if necessary.



*To shampoo the hair*, dissolve a piece of plain, mild soap in hot water and strain. When the solution has cooled to a jelly rub it well into the scalp, using great care not to scratch the skin with the finger nails. Then, with the child's forehead resting on a folded towel on the edge of the washstand, repeat the process for the back and sides of the head. After the soapy application has been thoroughly rubbed into every part of the scalp, rinsing water should be poured over it from a pitcher, taking care to have the first water just comfortably warm and each successive rinsing somewhat cooler, until the last one is quite cold. In warm weather the hair may be dried out of doors in the wind and sun, although the hot sunlight should not fall directly on the head for any length of time. If the weather is cold, cloudy, or stormy, the hair should be rubbed nearly dry with warm towels and allowed to hang loose for a time. Care should always be taken to dry the scalp completely. Combs and brushes should be washed very often, and dried, whenever possible, in the open air and sunshine.

The hair is so important to the beauty and comfort of the adult that the mother who takes the pains necessary to keep her child's scalp healthy will be well rewarded in later years for her trouble.

Little girls may wear the hair short until they are at least 10 years old, to their great comfort and advantage. Curly hair should not be allowed to become a source of suffering to a child, through the mother's desire to keep it nicely dressed. A thin mobcap may be worn during outdoor play to keep long or curly hair in shape.

#### CARE OF THE EYES.<sup>1</sup>

The care of the child's eyes should begin at the moment of birth and continue throughout childhood.

Healthy and normal eyesight is a priceless possession and no trouble is too great to secure it, nor is carelessness anywhere more inexcusable than where the sight is involved. Many eye faults may be prevented or corrected by early care; and a child showing any tendency to abnormalities, such as cross-eye, should be promptly placed in charge of a specialist in the care of the eyes.

The child who persistently holds his book or his work too close to his eyes—that is, nearer than 14 inches—should be taken to the doctor for examination. Many a child who is seemingly slow or stupid about his school work may be suffering from nearsightedness or farsightedness, and when these troubles are corrected by the proper glasses will show prompt improvement in his work.

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<sup>1</sup> See Prenatal Care, p. 30, and Infant Care (revised), p. 27, for directions as to the care of the baby's eyes.

Children need to be watched lest they harm their eyes in various ways, such as reading without sufficient light, by an unsteady or badly adjusted light, or using the eyes too long at a time on the same work. They should be furnished with tables of a height suitable to accommodate the eyes at work without requiring stooping or other posture involving strain. They should not read facing the light, nor should the light be reflected from a shiny surface; polished tables used for reading, studying, or other close work should be covered with some dull-surfaced material, like green felt, which does not reflect the light.

It is wise to teach a child to raise the eyes and look out of the windows for a few moments at frequent intervals during reading or close work, resting the muscles that have been focusing the eye for short distance. Teach him also to look frequently into space over wide stretches of country, over the water, or up to the sky, always taking care to avoid gazing directly at the sun. One of the great advantages of nature study and out-of-door life is that the eyes are there trained to accommodate for considerable distances and to be quick and sure in observation.

Children who must often face a glare of light reflected from snow or ice should be provided with slightly colored glasses. Brown and yellow are preferable to other colors.

The eyes are often sensitive after illness, particularly after measles and scarlet fever, and the mother must take care that they are not used too soon or too long at a time. Care at such times, even at the cost of some trouble in providing entertainment which avoids over-use of the eyes, should not be weighed against the harm that may result from overstrain.

The child should not be allowed to form the habit of rubbing the eyes. A teaspoonful of boric acid dissolved in a pint of water is an excellent eyewash, and a child who persistently rubs his eyes may need to have them washed every day. Such treatment will doubtless do much to prevent styes and crusts on the edges of the lids, to allay inflammation, and often to avert more serious trouble. Use bits of absorbent cotton for cleaning the eyes—a fresh piece for each eye—and destroy them immediately.

#### CARE OF THE TEETH.<sup>1</sup>

The age period covered by the present bulletin—namely, from the end of the second year to the beginning of the sixth—is of great importance in the life history of the teeth. By the end of the second year the baby should have his 20 milk teeth complete and they should serve him until the sixth or seventh year, when the first tooth of the

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<sup>1</sup> See Prenatal Care, p. 14. and Infant Care (revised), p. 30.

permanent set will appear. Therefore the care of the first teeth is a matter of great importance to the child's health.

The examination of many thousands of school children in this and other countries shows that nearly all have dental defects. These include decayed teeth, of which it is said that the average school child has from three to five; protruding teeth; irregular and crowded teeth; malformation of the teeth and gums; and general uncleanness and unsightliness. The result of these defects is immeasurable, the most immediate being the loss of some part of the power to chew. The human body is built up by the food materials which it is able to digest, absorb, and incorporate into its tissues. The first process which the food undergoes in digestion is the cutting and grinding which is given it by the teeth; by this process the food is so subdivided that it is readily swallowed and more easily and completely mixed with the various digestive juices, the first of which is the saliva of the mouth. If the teeth are too few, or if they are broken, decayed, or otherwise unfit for doing the work of chewing, or if they are so irregular that the grinding surfaces do not meet properly, some of the food will not be properly cut, and other digestive organs will have to do the neglected work of the mouth. Digestion may therefore require a somewhat longer time or some of the food may fail to be completely digested. Children who have lost their teeth can not bite and chew anything but the softest foods and are likely to limit their diet unduly, and such dietary deficiencies may have a serious effect upon the whole life of the child.

It is believed that the reflex disturbances due to the pain of aching teeth or sore gums cause serious nervous trouble.

Many forms of illness result from the presence among the roots of decaying teeth of tiny pus pockets which continually discharge their contents into the blood stream. Furthermore, there is abundant evidence to show that the germs of disease, including those of tuberculosis and diphtheria, find lodgment in dental cavities and in irregularities in the teeth, and the neglect of proper cleanliness leads to the possibility of attacks of such illnesses.

The medical examination of children with bad teeth shows also that they are often affected with adenoids, are below the average in stature, and are very apt to be backward in school.

The care of the teeth is thus not merely a matter of beauty but is of profound importance in the whole existence of the child, and to neglect the teeth and allow bad conditions to develop may mean that he will carry a needless burden of ill health throughout his life.

Children should be taken regularly to a good dentist once or twice a year after the first set of teeth is complete. If cavities appear, they should be filled with soft temporary fillings, and each tooth should be saved as long as possible. If some of the temporary teeth

are lost too early, the remaining teeth will be apt to crowd forward into the space thus left vacant, and when the later teeth come they will be pushed out of their regular places and the natural line destroyed. The first molars especially should be preserved, because they furnish the grinding surfaces necessary to proper chewing of food. If they fall out too soon, the child is hardly able to chew anything hard or tough and is likely to swallow such food in chunks.

#### DIET AND THE TEETH.

In order to have strong and healthy teeth the child's food must be carefully chosen with that end in view. Great emphasis has already been laid upon the necessity of a well-chosen diet of mixed foods, in order that the child may be furnished with all the materials of growth. From such a diet the healthy child should be able to build up sound teeth, but in addition the diet has other important effects upon the teeth. The jaws and teeth require constant exercise for proper growth and development; consequently every day the child should have some hard food suitable to his age and development which can not be swallowed without chewing, such as toast, crusts, and hard crackers, and as he grows older broiled, boiled, or roasted meat. The child should be taught to eat his food without much drinking, so that he will be compelled to chew it well in order to swallow it comfortably. One practical way to accomplish this is to keep the glass of milk or water out of sight until the solid food has been eaten.

Dental decay results from the acids produced by the fermentation of food particles remaining in the mouth after eating. Soft, sweet, sticky, and pasty foods fill the recesses between the teeth or any irregularities, where they readily ferment. For this reason when foods rich in starches and sugars have been eaten alone or at the close of a meal it is most important to scour the teeth and rinse the mouth with especial care. The daily use of some hard foods, such as raw fruits like apples or pineapples, celery, toast, and other wholesome but resistant foods, aids in keeping the teeth and mouth clean.

#### CLEANING THE TEETH.

The baby should be taught the use of the toothbrush very early; but throughout the whole period of childhood the mother will have to oversee the process, for very few children can be trusted to do it thoroughly. Ideally, the teeth should be brushed after each meal, and especially at bedtime, because fermentation in the mouth proceeds rapidly at night. A narrow brush, with a slightly curved handle, having only two or three rows of bristles set in separate tufts will make the process of cleaning easier. Any of the simple tooth powders may be used. Dry precipitated chalk answers every purpose if it has been very finely powdered.

The child should be taught to brush the teeth downward or upward on the outer surface, rather than crosswise. When the teeth are brushed across the surface the tendency is to push whatever is on them into the cracks and crevices of the teeth or under the edges of the gums. The inner surfaces of the teeth should also be brushed up and down, and the tops, which are the grinding surfaces, should be brushed in all directions; after the scrubbing is finished the mouth should be thoroughly rinsed with warm water. Some such regular and thorough method should be insisted upon in order to establish the permanent habit. When there are several children in a family they may be amused and interested by a toothbrush drill.<sup>1</sup>

#### PERMANENT TEETH.

The permanent teeth begin to erupt about the sixth year and about one year before the temporary teeth begin to fall out. The first of the permanent teeth to make its appearance is the sixth-year molar, which comes in just behind the last molar of the temporary set. Mothers sometimes think because it does not push out another tooth that this is a temporary tooth, and on this account neglect it until in many cases it can not be saved. As it is with these teeth that most of the hard chewing must be done throughout life, it is of the utmost importance to the health of the child that they should be most carefully preserved.

DIAGRAM III.

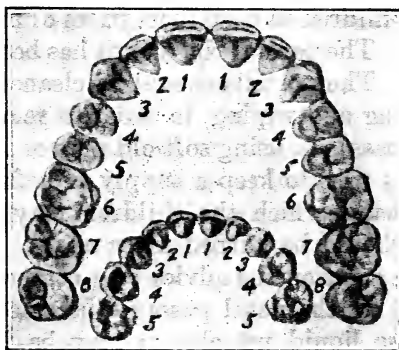
#### FIRST OR "MILK" TEETH.

1. Central incisors, 5 to 8 months of age.
2. Lateral incisors, 7 to 10 months of age.
3. First molars, 12 to 16 months after birth.
4. Cuspids ("eye" and "stomach" teeth), 14 to 20 months of age.
5. Second molars, 20 to 32 months of age.

#### PERMANENT TEETH.

6. First molars, 5 to 7 years of age.
  1. Central incisors, 6½ to 8 years.
  2. Lateral incisors, 7 to 9 years of age.
  4. First bicuspids, 9 to 11 years of age.
  5. Second bicuspids, 10 to 12 years of age.
  3. Cuspids, 11 to 14 years of age.
  7. Second molars, 11½ to 13 years.
  8. Third molars, 16 to 21 years or later.
- Possibly never.

#### PERMANENT TEETH.



MILK TEETH.

There are 32 teeth in the permanent set, but this includes the four wisdom teeth, which may not appear until the twentieth year, or in some cases not at all.

Diagram III<sup>2</sup> illustrates the positions of the teeth and gives their names and the approximate times of their appearance.

<sup>1</sup> Drill approved for use in New York City public schools is published by S. S. White Dental Manufacturing Co., Philadelphia.

<sup>2</sup> Courtesy of Lea & Febiger, publishers, Philadelphia, Pa.

## CARE OF THE EARS.

Healthy ears require little or no care beyond keeping the external portion clean. No hard article of any sort should be introduced into the ear. It is better not to attempt to remove accumulations of wax, since nature usually takes care of any superfluity and efforts at removal may do harm.

Discharging ears, pain or swelling in or near the ears, and deafness are symptoms of trouble which need prompt medical attention. Many school children suffer from impairment of hearing which greatly retards their progress and makes them seem dull and stupid. Deafness often occurs because ear troubles were not properly treated. It is comparatively easy to cure certain conditions in the ear at the start which, if allowed to go on without treatment, may cause permanent impairment of the hearing.

Children sometimes push beads or other objects into the ears. As a rule these will slip out if the outer ear is pulled downward and back with the head inclined. Injury often results from attempts to remove a foreign body. If an object which has been introduced into the ear can not be easily removed with the fingers, the child should be taken to a physician.

## CARE OF THE MOUTH, THROAT, AND NOSE.

It is now believed that disease germs enter the body chiefly by way of the mouth, throat, and nose, and since most of the illnesses of childhood are due to infections it is of great importance to teach children to keep these parts of the body scrupulously clean.

The care of the mouth has been described under "Teeth," page 56.

The nostrils should be cleaned every morning, by thorough blowing and wiping, in order to remove any accumulations from the air passages, using soft old rags or absorbent cotton for this purpose. It is wise to keep a supply of soft paper handkerchiefs or napkins on hand which the children may use as freely as necessary. These should be burned after using. A nasal douche should not be used except on the advice of a competent physician.

If the nasal passages become clogged a few drops of mineral oil or liquid petrolatum may be introduced into each nostril with a medicine dropper when the child is ready for bed. This treatment will tend to relieve the obstruction and help to insure quiet sleep.

A child should be taught to gargle the throat, first using clear warm water. In addition the child who is trained in the daily habit of rinsing the mouth and throat, at least before going to bed, will be protected to some extent against the lodgment of disease germs in those parts. It will be much easier to treat a sore throat with medicated gargle, should that become necessary, if a child is already accustomed to gargling.

An important part of the care of the mouth, throat, and nose is the detection and treatment of such troubles as decayed teeth (already discussed), common infectious colds, and enlarged adenoids and tonsils.

#### ADENOIDS AND TONSILS.

The overgrowth of the adenoid tissues in the top of the throat behind the nose which partially closes the nasal air passages is often the cause of serious harm to a growing child. Children who are thus affected breathe with their mouths open; and, while they sleep, snore and toss restlessly about trying to find a position in which they can breathe comfortably. They are often slightly deaf and seem dull and inattentive. Children suffering from adenoids can not blow the nose and often speak in a nasal voice. They are subject to repeated colds in the head and persistent catarrh, often leading to bronchitis. Headaches and various nervous troubles accompany adenoids, and attacks of acute illness, such as scarlet fever, diphtheria, whooping cough, and measles are apt to be more severe if a child has adenoids. When these symptoms are noted the child should be examined by a physician. The operation for the removal of adenoids and tonsils is comparatively simple in skillful hands and is then attended by little danger. Most children recover at once and begin very soon to show improvement. They breathe easily and sleep quietly. The mouth remains closed, color improves, the listlessness disappears, the weight begins to increase, and in many cases a great change is made in the child's whole appearance in a few months. The beneficial results are less apparent in older children, when the habits induced by continued efforts to work against this handicap are more firmly fixed.

*Enlarged tonsils* often accompany adenoids and may be removed at the same operation if they are troublesome. If the tonsils are swollen and repeatedly inflamed, pockets of pus form in them which discharge their contents into the blood stream and lead to illness. It is proved that rheumatism and certain heart troubles may result from this cause. Sore or swollen tonsils should be brought to the doctor's attention and he will decide whether they need to be removed.

Mouth breathing may be due to other conditions than the presence of overgrown adenoid tissues, and this symptom always requires attention.

A "cold" is one of the most common of the infectious diseases and is the direct cause of much suffering and the indirect cause, in many cases, of more serious diseases. Children should be kept away from people suffering from colds and from those who are coughing and sneezing. It is well known that a cold often runs through a whole

family because no precaution was taken to protect the well members. Children with colds should be treated as ill.

#### CARE OF THE FEET.

Attention has already been called to the necessity of wearing properly fitting shoes and to the deformities which may result from improper shoes.<sup>1</sup> The soles of children's shoes should have straight inside lines and should be everywhere as wide and long as the foot while standing. Both sole and upper should be flexible enough to permit the foot to bend easily for walking. The heel should be low and broad. A shoe should never be laced or buttoned so tight that marks show on the ankles.

#### TRAINING THE FEET.

From the first a child should be taught to walk with the toes straight ahead, toeing neither out nor in. Turning the toes out in walking throws the weight on the inner side of the foot and tends to produce the condition known as "flat foot."

The names "flat" foot, "weak" foot, "pronated" foot, and "broken arches" are given to conditions in which the foot is rolled outward and the ankle is bent inward. The foot is not really flattened nor have the arches actually broken down, but the muscles of the leg have been so strained that they are no longer able to hold the foot in an upright position.

Flat foot is quite common in children. Those so afflicted turn the toes out and walk with a stiff gait. The shoe will have the upper bulging inward over the heel and instep; the front inner corner of the heel and the inner portion of the sole will be worn off. Such children tire easily and complain of pain in their feet, legs, and back and often object to walking any distance.

Since the shoe is usually at fault in these troubles the first step in the cure must be to have the right sort of shoes properly fitted (see p. 35). In addition to the right kind of shoes the foot must have strengthening exercise—walking, dancing, standing on tiptoe, and the like. An essential part of this treatment is to improve the child's health and general condition in every way by proper food, exercise, and other hygienic measures.

In bad cases of "flat" foot it may be necessary to use, temporarily, heels raised somewhat on the inner side, braces, or supports, while the weak muscles are growing strong; but, where such care is needed, the case should be in the hands of an orthopedic surgeon for proper treatment.

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<sup>1</sup> See p. 34.



## CARE OF THE BOWELS.

The first essential in the care of the bowels is to establish the habit of regular evacuation. This should have been accomplished in infancy, but no child can be trusted to carry it on without oversight. He should be taught to go to the closet at the first desire and to go each day at the same time. The most natural time is soon after breakfast. It is of little use to try to break up a persistent case of constipation without the assistance of this regularity, but to accomplish this the mother must be constantly on guard. Constipation may be due to faults of diet, to lack of muscular tone, or in a few cases to some congenital defect. Persistent constipation should be brought to the attention of a physician.

DIET IN CONSTIPATION.<sup>1</sup>

Constipation may be due to too much starchy food or to an overabundance of milk or to the lack of fruits and vegetables. Constipated children should have plenty of the coarser cereals, well cooked, and graham or bran bread and biscuit.<sup>2</sup> Milk should be greatly reduced in quantity or given up altogether for the time being; rice should be omitted. Fresh fruits should form a large part of the daily ration, especially oranges, grapes, apples, pears, peaches, and dried fruits, like figs and prunes. It is well to give some kind of fruit the first thing in the morning; and the child should have an abundance of drinking water, especially just before the morning meal and at bedtime. Vegetables should form a considerable part of the day's meals, especially the fresh green vegetables—asparagus, spinach, peas, squash, carrots, string beans, and the like.

Vigorous out-of-door exercise—running, jumping, climbing, skating, and bicycling—will help to tone up the abdominal muscles and improve the sluggishness of the bowels.

Massage of the lower abdomen may be given gently just after the child goes to bed and before he rises in the morning.

Suppositories, or a cone of oiled paper, may be used with young children occasionally, merely to supply to the lower part of the rectum the irritation needed to start a movement and to help induce a regular habit.

Injections of warm soapy water, glycerin and water, or sweet oil may be necessary in rare instances to induce an immediate movement or to break up very dry stools, but the constant use of any form of mechanical aid to bowel movement is most unwise, as it tends to

<sup>1</sup> See *Infant Care* (revised), p. 83.

<sup>2</sup> *Bran bread*: One cup of cooking molasses, 1 teaspoonful of soda, 1 small teaspoonful of salt, 1 pint of sour milk or buttermilk, 1 quart of bran, and 1 pint of flour. Stir well and bake for an hour in a slow oven. It may be baked in a loaf or in gem pans, as preferred.

reduce the power of the natural effort. Medicines should rarely be given, and as far as possible only under medical direction.

#### HOW TO KEEP CHILDREN WELL.

As already explained, a child who is to grow and develop normally requires plenty of good food, sleep, exercise, and out-of-door life. In addition, special care must be devoted to the prevention of certain weaknesses and defects by attention to them in the earliest stages. A child must also be guarded as far as possible against attacks of illness. Every mother should recognize the fact that any illness, however brief and slight, is a hindrance to growth, and that every hour spent by the child in pain or disturbance means some loss to him and may mean permanent impairment of some organ or function of the body. It is now known that many serious and chronic illnesses of adult life have their beginnings in some disease of childhood like measles, whooping cough, scarlet fever, diphtheria, or the serious disturbances of digestion.

An important measure which the intelligent mother may take in the prevention of other forms of illness, as well as of weaknesses and defects, is to have the child thoroughly examined by a physician at regular intervals. After a child is ill or some defect or disability has grown up, the physician will do all he can to relieve the condition, but his service would have been infinitely greater to the family if he could have had the opportunity to foresee and prevent the bad result. This is being done for babies in hundreds of infant-welfare stations in many cities. Mothers bring their babies to these stations for regular weighing and examination and are advised by the nurses and physicians as to the proper food and care necessary to keep the baby well and make him thrive.

#### COMMON DISEASES OF CHILDHOOD.

The principal diseases which afflict children under 6 years of age fall into four general classes, namely, prenatal, gastric and intestinal, respiratory, and infectious.

Many young babies lose their lives or are seriously weakened by the unfavorable conditions surrounding the mother before the baby is born or by lack of proper care at childbirth.<sup>1</sup>

A large number of infant deaths are caused by diarrheal diseases due very largely to bad feeding. A great many babies' lives might be saved every year solely by the use of proper food and suitable methods of feeding.<sup>2</sup>

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<sup>1</sup> The first bulletin of this series, *Prenatal Care*, gives simple directions for the care of prospective mothers, and may be had upon application to the Children's Bureau, U. S. Department of Labor, Washington, D. C.

<sup>2</sup> *Infant Care* (revised), the second bulletin in this series, gives directions for the care and feeding of the baby up to the end of the second year, and may be had upon application to the Children's Bureau, U. S. Department of Labor, Washington, D. C.

The third important cause of death among young children is found in the respiratory diseases such as bronchitis and pneumonia, and the fourth in communicable diseases such as measles, whooping cough, and scarlet fever. In general, the rule is that the younger the child the more serious will be the effect of these diseases.

No more harmful doctrine was ever held by mothers than that all children must have the common infectious diseases, and therefore may as well be deliberately exposed to them in order to have them over while young. It will never be known how many lives have been sacrificed to this idea nor how many children have been permanently weakened as a result.

For such reasons it should be the aim of every mother to prevent every possible hour of illness among her children.

#### INFECTIOUS DISEASES.

Each of these diseases is caused by taking into the body microscopic living plants or animals called germs and *in no other way*. Each disease has its own particular germ which infects the body and gives rise to that kind of illness and no other. It is by the communication of these germs from the sick to the well that children "catch" diseases and epidemics are caused. To prevent the spread of infectious diseases it is necessary to keep sick and ailing children by themselves and also to recognize illness in its early stages, because some diseases may be communicated before they have fully developed. For the most part well children are infected by direct contact with sick ones and only in a few cases by indirect means. The germs of these diseases lodge in great numbers in the throat, mouth, and nose of the patient and are readily spread about in the fine spray that flies from the mouth in speaking and more readily in coughing and sneezing.

When children play together there is abundant opportunity for the passing of the germs of infection from one to another if one happens to be ill. Children must be taught to cover the mouth when coughing or sneezing and to keep away from others who frequently cough or sneeze. It is also necessary to teach a child not to put into his mouth bubble pipes, pencils, horns, whistles, or similar toys which have been used by others, nor to use another's handkerchief. He should also be taught to clean the nose thoroughly, as part of the daily toilet, and also to scour the teeth, rinse the mouth, and gargle the throat. These preventive measures are especially necessary if some disease is present in the neighborhood. At such times, too, it is most important to be quick to recognize early signs of illness and to isolate the child until the symptoms disappear or recov-

ery is complete. It is far better to keep a child by himself for a day or two than to run the risk of spreading disease by neglect of this comparatively simple measure. There is no other class in the community upon whom the responsibility for the control of infectious diseases lies in such degree as upon mothers—the natural guardians of children. Every mother is responsible not only to her own family but to every other family in the neighborhood for taking every known precaution against the spread of illness; not until mothers generally understand and accept this responsibility shall we have the beginning of the end of epidemics of disease.

The means needed for stamping out infectious diseases are chiefly the careful isolation of the sick child, not only from the other children in the same family but from all children, until the nature of his illness is determined; and if this proves to be infectious, to continue the isolation as long as may be required. Meanwhile the apparently unaffected children should be watched with great care. Certain diseases, like measles, may be transmitted even before they are recognized; and any child who complains of being tired, who coughs, sneezes, or loses his appetite, is open to suspicion and should be under careful supervision as long as any evidence of illness persists.

Among the more frequent of the serious diseases of childhood are measles, whooping cough, scarlet fever, diphtheria, syphilis, tuberculosis, infantile paralysis, and the diseases of the respiratory tract—such as bronchitis and pneumonia—which often complicate other diseases. As several of these diseases have been briefly described in the preceding bulletin of this series,<sup>1</sup> this information need not be repeated here. The United States Public Health Service publishes much authoritative material on infectious diseases and will send these publications free to anyone asking for them. Mothers are urged to provide themselves with a complete set, which will give them expert information and advice in dealing with these diseases.

#### COMMON ACCIDENTS OF CHILDHOOD.<sup>2</sup>

Every child is liable to injure himself seriously in the course of his early years of unrestrained activity, and it is necessary for mothers to learn the best way of meeting such emergencies and to acquire the technique of first-aid dressings.

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<sup>1</sup> Infant Care (revised). U. S. Children's Bureau Publication No. 8.

<sup>2</sup> Dorothy Reed Mendenhall, M. D., University Extension Division, Correspondence-Study Department, University of Wisconsin, Madison, Wis.

## WOUNDS.

Whenever the flesh is broken it is wise to apply tincture of iodine as soon as possible to the break if the wound is small and then to cleanse the part with clean boiled water. Washing out the part first with hydrogen peroxide or water is a bad plan, for germs from the surrounding parts are likely to be carried into the depth of the wound or cut.

In large cuts, wounds, or burns the importance of keeping the injury clean and free from germs is even more urgent. The clothing should be cut away from the injured part and the wound exposed to the air. After the bleeding is controlled by means of pressure on the adjacent blood vessels the wound may be covered by a sterile dressing or left exposed to the air, which can not injure it, until the dressings are prepared. Such an injury must be handled as little as possible until the hands of the attendant can be sterilized by scrubbing them with hot water, soap, and a scrubbing brush for five minutes and then soaking them several minutes in an antiseptic solution. All dishes or instruments used at the dressing should be thoroughly boiled before using. If a sterile gauze dressing or compress can not be obtained, gauze or cotton cloth to be used in covering the wound must be boiled in clean water before being applied. The wound then should be cleansed thoroughly and covered with a dressing, which has been sterilized or boiled in clean water, and bandaged firmly. In case of a burn a sterile solution of bicarbonate of soda or boric acid makes a comfortable application. An antiseptic dressing may be used for cuts or other wounds, but if care has been taken not to infect them healing will follow the use of any sterile protective dressing.

The injured part should be kept at rest and daily dressing should be made under the strict aseptic precautions described above.

## HEMORRHAGE FROM THE NOSE.

Nosebleed is a common and usually unimportant ailment, but occasionally the amount of blood lost is of serious moment. Pressure of the root of the nose, or under the lip just below and on each side of the nostrils may help stop the hemorrhage. The nostril may be plugged by inserting a small wad of cotton. The head should be kept elevated and ice may be applied locally.

In serious cases packing the back of the nose may have to be resorted to by the physician if the bleeding is beyond reach from the front.

## BUMPS AND BRUISES.

These are perhaps the commonest injuries which young children receive. A slight bruise ordinarily requires no treatment and is forgotten in a few minutes, although the discoloration of the skin may remain for some time. If the injury is more severe, cloths wrung out of very cold or very hot water, or cracked ice wrapped in a cloth, may be applied to the bruise. Either alcohol, arnica, or witch-hazel, each diluted with water, may be used upon a bruise.

If the skin is broken, it should be treated as a wound.

# APPENDIX.

## TABLE OF HEIGHTS AND WEIGHTS.

In order that the mother may be able to tell whether her child is up to the average child of the same age and sex in height, weight, and girths the following table is given. Roughly speaking, the height and weight of a child may be taken as an index of his health, and for this reason growing children should be frequently weighed and measured. It is wise to keep a record of these figures.<sup>1</sup> The following table gives average figures, which may be used as a guide to show parents the condition of their own child.

*Table of heights and weights of children.<sup>a</sup>*

| Age.          | Boys.           |                              | Girls.          |                              | Age.        | Boys.           |                              | Girls.          |                              |
|---------------|-----------------|------------------------------|-----------------|------------------------------|-------------|-----------------|------------------------------|-----------------|------------------------------|
|               | Height, inches. | Weight, pounds. <sup>b</sup> | Height, inches. | Weight, pounds. <sup>b</sup> |             | Height, inches. | Weight, pounds. <sup>b</sup> | Height, inches. | Weight, pounds. <sup>b</sup> |
| Birth.....    | 20.6            | 7.6                          | 20.5            | 7.16                         | 33 months.  | 36½             | 30½                          | 35½             | 29½                          |
| 3 months....  | 23½             | 13                           | 23½             | 13                           | 34 months.  | 36½             | 31½                          | 36½             | 30½                          |
| 6 months....  | 26½             | c 18                         | 25½             | c 16½                        | 35 months.  | 36½             | 31½                          | 36½             | 30½                          |
| 7 months....  | 27½             | c 19½                        | 26½             | c 17½                        | 36 months.  | 37½             | 32½                          | 36½             | 30½                          |
| 8 months....  | 27½             | c 19½                        | 27              | c 18½                        | 37 months.  | 37½             | 32½                          | 36½             | 30½                          |
| 9 months....  | 28½             | c 20½                        | 27½             | c 19½                        | 38 months.  | 37½             | 33½                          | 37½             | 31½                          |
| 10 months.... | 28½             | c 20½                        | 27½             | c 19½                        | 39 months.  | 37½             | 33½                          | 37½             | 31½                          |
| 11 months.... | 29              | c 21½                        | 28½             | c 20½                        | 40 months.  | 38½             | 33½                          | 37½             | 32½                          |
| 12 months.... | 29½             | c 21½                        | 28½             | c 20½                        | 41 months.  | 38½             | 33½                          | 37½             | 32½                          |
| 13 months.... | 29½             | c 22½                        | 29½             | c 21                         | 42 months.  | 38½             | 33½                          | 38              | 32½                          |
| 14 months.... | 30½             | c 23                         | 29½             | c 21½                        | 43 months.  | 38½             | 33½                          | 38½             | 32½                          |
| 15 months.... | 30½             | c 23½                        | 30½             | c 21½                        | 44 months.  | 38½             | 34½                          | 38½             | 33                           |
| 16 months.... | 31½             | c 24½                        | 30½             | c 22½                        | 45 months.  | 39              | 34½                          | 38½             | 33½                          |
| 17 months.... | 31½             | c 24½                        | 30½             | c 22½                        | 46 months.  | 39              | 34½                          | 38½             | 33½                          |
| 18 months.... | 31½             | c 24½                        | 31½             | c 23½                        | 47 months.  | 39½             | 35                           | 38½             | 33½                          |
| 19 months.... | 32½             | c 25½                        | 31½             | c 23½                        | 48 months.  | 39½             | 35                           | 39              | 33½                          |
| 20 months.... | 32½             | c 25½                        | 32              | c 24½                        | 5 years.... | 41.6            | 41.1                         | 41.3            | 39.7                         |
| 21 months.... | 32½             | c 25½                        | 32½             | c 24½                        | 6 years.... | 43.8            | 45.2                         | 43.4            | 43.3                         |
| 22 months.... | 33½             | c 26½                        | 32½             | c 25½                        | 7 years.... | 45.7            | 49.1                         | 45.5            | 47.5                         |
| 23 months.... | 33½             | c 27                         | 32½             | c 25½                        | 8 years.... | 47.8            | 53.9                         | 47.6            | 52.0                         |
| 24 months.... | 33½             | c 27½                        | 33½             | c 26½                        | 9 years.... | 49.7            | 59.2                         | 49.4            | 57.1                         |
| 25 months.... | 34              | 27½                          | 33½             | 26½                          | 10 years... | 51.7            | 65.3                         | 51.3            | 62.4                         |
| 26 months.... | 34½             | 28½                          | 33½             | 27½                          | 11 years... | 53.3            | 70.2                         | 53.4            | 68.8                         |
| 27 months.... | 34½             | 29                           | 33½             | 27½                          | 12 years... | 55.1            | 76.9                         | 55.9            | 78.3                         |
| 28 months.... | 35½             | 29½                          | 34½             | 27½                          | 13 years... | 57.2            | 84.8                         | 58.2            | 88.7                         |
| 29 months.... | 35½             | 29½                          | 34½             | 27½                          | 14 years... | 59.9            | 94.9                         | 59.9            | 98.4                         |
| 30 months.... | 35½             | 29½                          | 34½             | 28½                          | 15 years... | 62.3            | 107.1                        | 61.1            | 106.1                        |
| 31 months.... | 35½             | 30½                          | 35½             | 28½                          | 16 years... | 65.0            | 121.0                        | 61.6            | 112.0                        |
| 32 months.... | 36              | 30½                          | 35½             | 29                           |             |                 |                              |                 |                              |

<sup>a</sup> The figures for height and weight at birth are from L. Emmett Holt (Diseases of Infancy and Childhood, 1916, p. 20) and are based on original observations. Those for boys at 3 months were given in a personal communication by Dr. Holt. The figures for height and weight from 6 to 48 months are from the Anthropometric Table compiled for The American Medical Association by F. S. Crum, and are based on the measurements of 10,423 normal babies (5,602 boys and 4,821 girls) examined at Baby Health Conferences in 31 States, and possibly represent measurements slightly above the average, especially in weight. The figures for height and weight from 5 to 16 years are quoted from Bowditch (Eighth Annual Report of the State Board of Health of Massachusetts, 1877, p. 275) and are based on the measurements of 23,931 Boston school children of American and foreign parentage (13,415 boys and 10,516 girls). They agree very closely with the table of average American height calculated by Boas from the data of 45,151 boys and 43,298 girls in the cities of Boston, St. Louis, Milwaukee, Worcester, Toronto, and Oakland; and the table of average American weight calculated from the data of about 68,000 children in the cities of Boston, St. Louis, and Milwaukee. (See Baldwin, B. T.: Physical Growth and School Progress, U. S. Bureau of Education Bulletin, 1914, No. 10. Whole No. 581, p. 150.)

<sup>b</sup> Approximate equivalents of decimal fractions of a pound in ounces: 0.1, 1½; 0.2, 3; 0.3, 4½; 0.4, 6; 0.5, 8; 0.6, 9½; 0.7, 11; 0.8, 12½; 0.9, 14; 1.0, 16.

<sup>c</sup> The weights given in this table for children under 2 years are somewhat higher than those given by L. Emmett Holt (Diseases of Infancy and Childhood, 1916, p. 20). These are—6 months: Boys 16 pounds, girls 15.5 pounds; 12 months: Boys, 21 pounds, girls, 20.5 pounds; 18 months: Boys 24 pounds, girls 23.5 pounds; 24 months: Boys 27 pounds, girls 26 pounds. A variation of from 1 to 2 pounds from the averages given in the table above should therefore not be considered abnormal. The heights given in the above table correspond very closely to those given by Holt.

<sup>1</sup> See record form, p. 82.

Heights and weights are given separately for boys and girls. Averages are given for births, for every month from 6 to 48, and thereafter for every year up to 16. The heights and weights of the children examined are to be compared with these average heights and weights. No heights and weights are given for the separate months after 48 months. With children over 4 years of age, use the age at last birthday.

#### HOME MEDICINE CLOSET.<sup>1</sup>

Every household has a collection of drugs and applications for sickness. Such articles should be kept together in some convenient closet or specially planned medicine cupboard, so as to be ready for any household emergency. All medicines should be plainly labeled and fresh; old, stale drugs are worthless and should be thrown out. Poison should be kept in bottles of a peculiar shape, with red labels, so that both touch and sight may give warning. It is safer also to keep poisons out of the general medicine cabinet, on some high shelf which children can not possibly reach.

The following articles will be of use in the average household:

#### APPLIANCES.

- 1 graduated 8-ounce glass measure.
- White Castile soap.
- 1 spirit lamp.
- $\frac{1}{2}$  pound absorbent cotton.
- Cotton waste.
- 1 package of antiseptic gauze.
- 3 gauze bandages, different widths (1, 2, and 3 inches).
- 1 roll adhesive plaster (1-inch width).
- 1 roll old linen and cotton cloth.
- 1 small blanket or old woolen pieces.
- 1 rubber sheet or piece of table oilcloth.
- 1 pair of scissors.
- 1 pair small dressing forceps.
- Clinical thermometer.
- 2 bent glass drinking tubes.
- 1 fountain syringe, preferably enamel ware.
- 1 bed pan.
- 1 hot-water bottle.
- 1 medicine glass and teaspoon.
- 1 eye cup.
- 1 oil atomizer for nose and throat.

#### DRUGS.

##### *Disinfectants:*

- Lysol.
- Bichloride of mercury tablets (these are deadly poison).
- Boracic acid.
- Hydrogen peroxide.
- Tincture of iodine.

<sup>1</sup> Adapted from *The Child in Disease*, Dorothy Reed Mendenhall, M. D., Correspondence-Study Department, Extension Division, University of Wisconsin, Madison, Wis.



*Cathartics:*

- Mineral oil.
- Milk of magnesia.
- Castor oil.
- Calomel; fifty  $\frac{1}{10}$ -grain.
- Epsom salts.
- Cascara sagrada tablets; fifty 5 grains.
- Senna leaves.

*External use (mainly):*

- Alcohol.
- Glycerin.
- Olive oil.
- Camphorated oil.
- Turpentine.
- Vaseline (tube).
- Cold cream.
- Zinc oxide ointment; 10 per cent.
- Carbolized vaseline (tube).
- Talcum powder.

*Miscellaneous:*

- Sirup of ipecac.
- Compound tincture of benzoin.
- Powdered mustard.
- Sodium bicarbonate (baking soda).
- Powdered charcoal.
- Precipitated chalk.
- Calcined magnesia.
- Aromatic spirits of ammonia.

## POISONS AND THEIR ANTIDOTES.

Children sometimes eat or drink poisonous substances, and it is necessary for the mother to know what to do in such an emergency. The first thing to do is to send for the doctor. An emetic should be given at once, except when the poison swallowed belongs to the corrosive class. (See Tables II and III following.) Lukewarm water is a good emetic. Let the patient swallow all he can be induced to take. In addition, a teaspoonful of common salt or mustard dissolved in a glass of warm water will cause vomiting in many cases, or one or two teaspoonfuls of the wine or sirup of ipecac. Tickling the back of the patient's throat will often lead to vomiting.

Tables I, II, and III,<sup>1</sup> which follow, give a list of the different classes of poisons with their antidotes.

---

<sup>1</sup> From American National Red Cross textbook on first aid, pp. 118-122.

TABLE I.—*Poisons for which an emetic is always given first.*

| Poison.  | Symptoms.   | Treatment (besides emetic).   |
|--|---|---|
| <b>UNKNOWN</b> .....   | .....   | Stimulants; soothing liquids.   |
| <b>ALCOHOL:</b><br>In any form—rum, gin, whisky, proof spirits, etc., also methyl alcohol.                                   | Giddiness, swaying of body, inability to stand. Face flushed, eyes red, skin clammy, weak pulse, may be convulsions and unconsciousness.  | Hot coffee or aromatic spirits of ammonia. Try to arouse, but if weak do not exhaust by making walk. Dash cold water on face and chest. When somewhat recovered, wrap warmly and put to bed.  |
| <b>ARSENIC:</b><br>Found in rat poisons, vermin killer, Paris green, Fowler's solution. Sometimes in tinned fruits and beer. | Severe pain in stomach, purging, severe cramps in legs, vomiting, dryness of throat, cold sweats, profound shock.   | Much lukewarm water. Magnesia in large quantity or dialyzed iron in $\frac{1}{2}$ -ounce doses, repeated. Beaten-up eggs or castor oil and stimulants. Warmth and rubbing. If rat poison has been taken, treat as for poisoning by arsenic. |
| <b>LEAD:</b><br>Sugar of lead, lead paint, white lead.   | Throat dry, metallic taste with much thirst, colic in abdomen, cramps in legs, cold sweat; sometimes paralysis of legs and convulsions.   | $\frac{1}{2}$ ounce Epsom salts in tumbler of water. Stimulants and soothing liquids.   |
| <b>OPIUM:</b><br>Laudanum, morphine, paregoric, some soothing sirups and cough mixtures.                                     | Drowsiness, finally unconsciousness; pulse full at first, then weak; breathing full and slow at first, gradually slower and shallow; pinhead pupils; face flushed, then purple.   | May have difficulty in getting emetic to work; plenty of strong coffee. Try to arouse by speaking loudly and threatening, but do not exhaust by compelling to walk, etc. Stimulants and artificial respiration.                             |
| <b>PHOSPHORUS:</b><br>In matches, phosphorus paste in many rat poisons and vermin killers, often with arsenic.               | Severe pain in stomach, vomiting. Skin is dark and may have odor of phosphorus. Bleeding from nose, bloody purging. Convulsions.  | Epsom salts, $\frac{1}{2}$ ounce in tumbler of water, or magnesia. Stimulants. Soothing liquid best. Milk. Avoid fats and oils.   |
| <b>PTOMAIN:</b><br>Poisoning by decayed meat, fish, milk, or ice cream.  | Nausea, vomiting, purging. Skin cold and clammy. Pulse weak. Severe pain in abdomen, cramps, great prostration and weakness. Often eruption on skin.  | Purgative, castor oil or Epsom salts. Teaspoonful of powdered charcoal, and repeat.   |
| <b>STRYCHNINE—NUX VOMICA:</b><br>Strychnine is frequently used on meat to poison animals and in some vermin killers.         | Convulsions, very severe, alternating with cramps, affecting all muscles of body. Back is bowed up by spasms of muscles. Jaws are locked. Spasm of muscles is so great that it prevents breathing, so face becomes dusky. | Powdered charcoal, if possible in large quantity. Follow with another emetic. Absolute quiet so as not to bring on convulsions.   |

TABLE II.—*Poisons for which an emetic should not be given first.*

| Poison.   | Symptoms.  | Treatment.  |
|---|--|---|
| <b>MERCURY:</b><br>Corrosive sublimate, antiseptic tablets. Other salts of mercury much less commonly used. | Corrosive sublimate is very irritating, so when taken turns mouth, lips, and tongue white. Mouth is swollen and tongue is shriveled; always metallic taste in mouth. Pain in abdomen. Nausea and vomiting mucus and blood, bloody purging, cold clammy skin, great prostration, and convulsions. | First, give white of egg or whole egg beaten up; flour and water, but not so good. Emetics, soothing liquids, and stimulants. |
| <b>NITRATE OF SILVER:</b><br>Lunar caustic.   | Pain in mouth and stomach; mouth first colored white, then black; vomit first white then turns black.  | Common salt dissolved in water, or milk very frequently. Then emetic. Afterward soothing liquids and stimulants.              |

TABLE III.—*Poisons for which an emetic should never be given.*

| Poison.   | Symptoms.   | Treatment.  |
|---|---|---|
| Strong corrosive acids:<br>1. <b>ACETIC.</b><br>2. <b>HYDROCHLORIC</b> (spirits of salt).<br>3. <b>NITRIC</b> (aqua fortis).<br>4. <b>SULPHURIC</b> (vitriol).  | Very severe burning pain in mouth, throat, and stomach. Wherever acid touches skin or mucous membrane they are destroyed. Frequently vomiting and purging. More or less suffocation from swelling of throat, great prostration and shock. | An alkali to neutralize acid. Best, magnesia or chalk in water, given frequently and freely. Lime, whitening, baking soda, plaster, tooth powder, or even wood ashes may all be used for alkali, or ammonia, a tablespoonful to 2 cups of water, but those mentioned above are better as they are less irritating. Afterwards, soothing liquids, milk, milk and egg, olive oil. Stimulants are practically always required. If acid has entered air passage, may inhale fumes of ammonia. |
| <b>OXALIC ACID</b> (salts of lemon or sorrel).  | Much like corrosive acids just named, but not so much burning of lips, etc.   | Magnesia, chalk, and water or limewater to neutralize acid. Then 1 ounce of castor oil and stimulants freely.   |
| <b>CARBOLIC ACID</b> (phenol):<br>(Very commonly used in attempts at suicide.)  | It is also a powerful corrosive poison which causes great pain and vomiting. Severe case: Unconsciousness very soon and early death. Usually easy to tell by odor of acid and burn, which with pure acid is white and with impure, black. | Rinse mouth with pure alcohol. If grown person, should swallow 3 or 4 tablespoonfuls of alcohol mixed with an equal quantity of water. Follow this in 5 minutes with 2 tablespoonfuls of Epsom salts dissolved in a little water. Though not so good, limewater may be used to rinse mouth, several glasses of it being swallowed; 3 or 4 raw eggs may be given or castor or sweet oil. Stimulants always, and keep warm.   |
| Strong caustic alkalis:<br>1. <b>AMMONIA</b> : Strong ammonia, ammonia liniment, camphor liniment.<br>2. <b>LIME</b> : Quicklime.<br>3. <b>POTASH</b> : Caustic potash.<br>4. <b>SODA</b> : Caustic soda. | Much like corrosive acids. Immediate severe burning, pain in mouth, throat, and stomach. Vomiting and purging. Alkali destroys tissues of mouth it has touched. Severe shock and suffocation from swelling.                               | An acid to neutralize alkali. Vinegar, lemon or orange juice. Tartaric or citric acid in plenty of water. Soothing liquids, stimulants. If can not swallow, may inhale acetic acid or vinegar from a pocket handkerchief.   |

**CAUTION:** In giving any antidote do not wait for it to dissolve but stir it up in any fluid which can be obtained except oil, and give it at once.

## GOVERNMENT PUBLICATIONS.

Many instructive publications relating to the home and family are published by the various departments of the Federal Government. These are distributed to applicants free of charge, as long as the supply lasts.

Persons wishing to obtain publications should make application, either in person or by mail, to the following offices:

For Farmers' bulletins, department bulletins, Yearbook reprints, Bureau of Animal Industry circulars, Bureau of Entomology circulars, and the Weekly News-Letter, apply to the Division of Publications of the Department of Agriculture.

For reports, reprints, and supplements of the Public Health Service and for Hygienic Laboratory bulletins, apply to the Chief Clerk of the Public Health Service.

For economic circulars of the Bureau of Fisheries or of the Bureau of Standards, apply to the Director of either Bureau.

For publications of the United States Bureau of Education, apply to the Division of Publications of that Bureau.

For publications of the Children's Bureau, address the Chief of the Bureau.

All the above offices are to be addressed at Washington, D. C.

Publications no longer available for free distribution may be purchased for a small price from the Superintendent of the Government Printing Office, Washington, D. C., to whom the request should be addressed. Money should be inclosed with the request. Postage stamps are not accepted. The superintendent will send price list, classified by subjects, upon request.

*Be sure to write your name and address plainly and fully*, since thousands of Government publications fail to reach their destination each year either because the address was insufficient or because no address whatever was given. The following sample form of request may be used:

EL PASO, TEX., June 1, 1917.

CHIEF CHILDREN'S BUREAU, U. S. DEPARTMENT OF LABOR,  
Washington, D. C.

DEAR MADAM: Kindly send me a copy of bureau publication No. —  
(give title desired).

Yours, truly,

-----  
(Name.)  
-----  
(Number.) (Street.)  
-----  
(P. O.)  
[or -----]  
(R. F. D. No.)  
-----  
(State.)

## WAS YOUR CHILD'S BIRTH REGISTERED?

If you are not sure of this, it will be a wise precaution to inquire of the State registrar of vital statistics, addressing him at the State capital.

It may some time be of the utmost importance to your child to be able to establish his age and nationality by referring to a legal public record of his birth and parentage. You may copy the principal facts from the birth record in the following form, if you desire, and keep this book as an additional memorandum for the child when he grows up:

Date when this memorandum was made.....

Child's name.....

Father's name.....

Mother's maiden name.....

Sex .....

If twin or triplet, give number in order of birth.....

Date of birth.....

(Month)

(Day)

(Year)

Birthplace:

City, town, or village.....

County.....

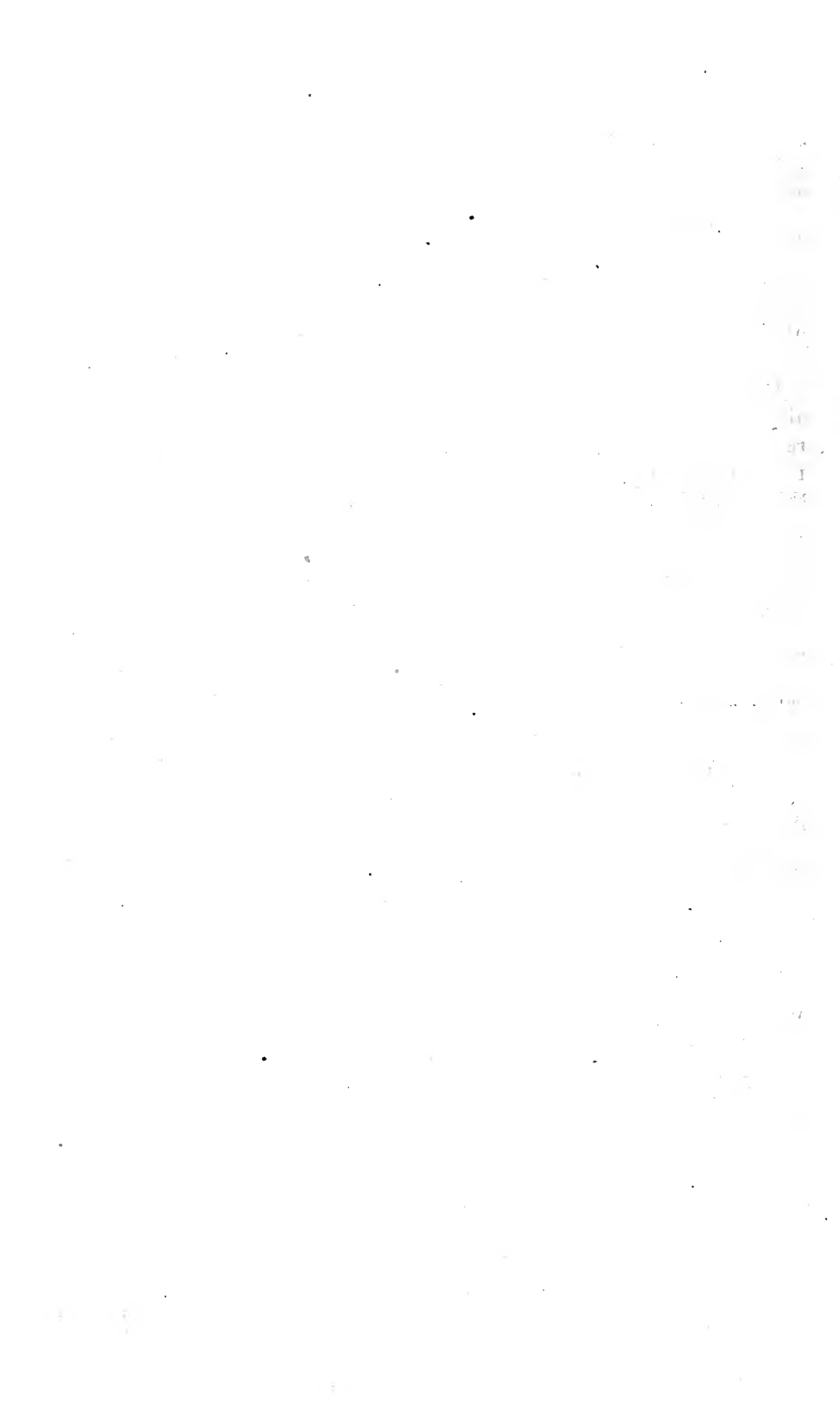
State .....

Attending physician:

Name.....

Address.....

Birth registration number .....



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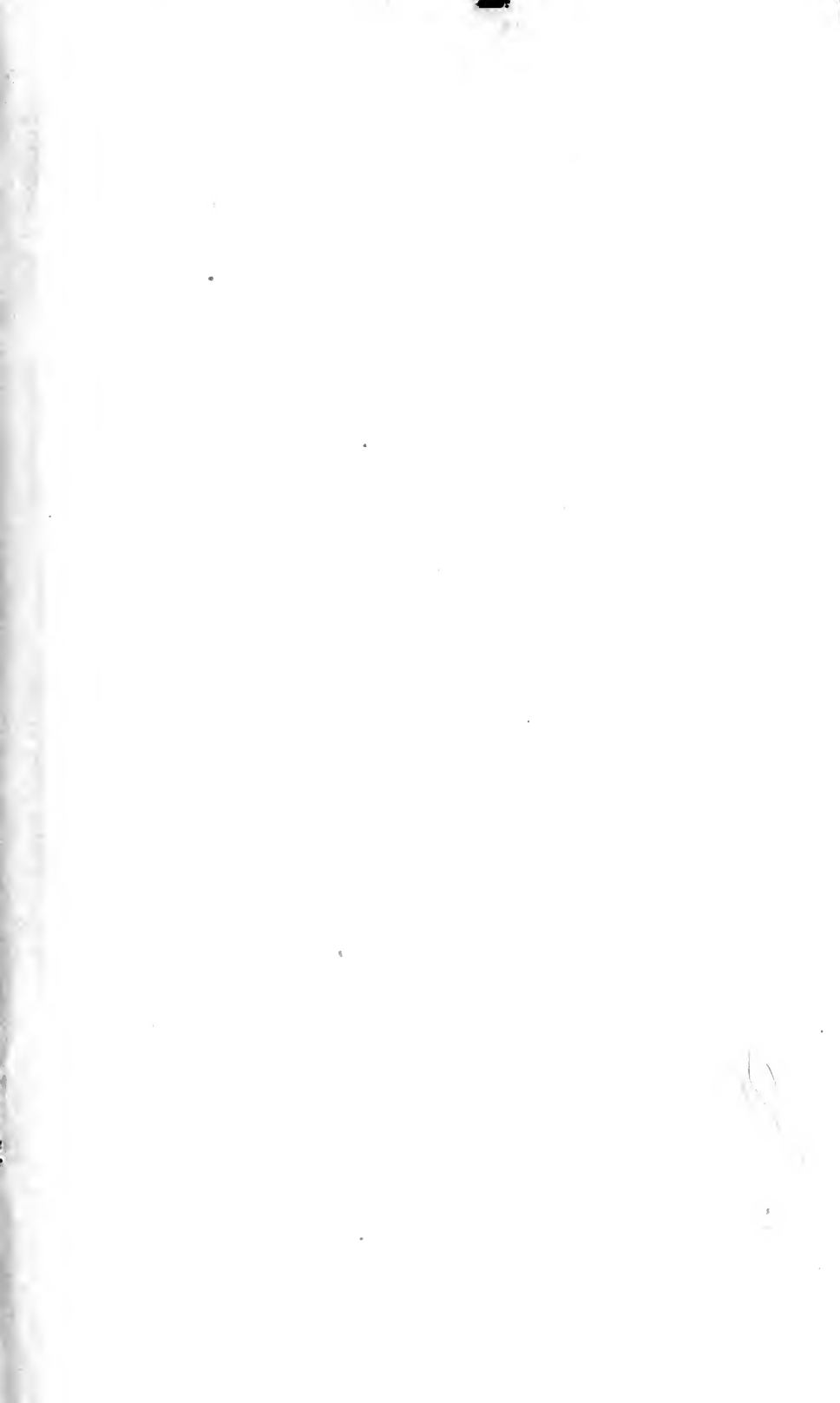
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